Managing Sleep Problems: In People with Anxiety, Depression, Trauma and Pain

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Agenda

Topics
Assessment (brief overview) Evidence for CBT-I
Psychoeducation Stimulus Control
Time-in-Bed Restriction Cognitive Therapy
Counter Arousal Delivery methods Implementation Consideration for Comorbid Diagnoses Medications

Thank you for taking this webinar

- Insomnia predicts suicide (Bernert et al., 2005; Woznica et al., 2014), the development of PTSD after a trauma (Wright et al., 2011), depression (Baglioni et al., 2011), substance abuse and anxiety disorders (Ford & Kamerow, 1989)
- Predicts poorer treatment outcomes in the therapy you are doing (e.g., MDD; Troxel et al., 2012)
- The therapy you are doing often does not resolve the insomnia—that insomnia predicts relapse for what you just treated (e.g., Karp et al., 2004; Zayfert & DeViva, 2004)
- CBT-I improves sleep and also anxiety, depression, inflammatory markers in those with cancer, pain (Savard et al., 2005)

Assessment

In non-sleep specialty settings

Insomnia Disorder is chronic

- Difficulty sleeping at least half the nights of the week (initiating and/or maintaining sleep)
  - No quantitative criteria (e.g., Lineberger, Carney, Means & Edinger, 2006)
- Difficulty functioning: contemporary views of insomnia conceptualize it as a 24-hour disorder (daytime component) and/or distress
- At least 3 months duration – its not acute
- Its not another sleep disorder such as apnea or shift work

-- It's not attributable to a medication/substance

-- Coexisting mental/medical conditions do not adequately explain it (wake up for panic and go back to sleep when settled)

(APA, 2013)

How to Assess?

- Ask (via clinical interview)
  - Subjective disorder
- Retrospective recall OK for impression of symptom severity and distress (see Insomnia Severity Index) in handouts

Clinical Interview

"How many nights per week do you have sleep difficulties?"

- Needs to be at least half the nights/week
- No quantitative criteria (e.g., Lineberger, Carney, Means & Edinger, 2006)

"How long have you had the sleep problem?"

- Needs to be at least 3 months
- CBT-I for acute insomnia (Randall, Nowakowski, & Ellis, 2018).

"Do you have this sleep difficulty even if you give yourself enough time to sleep? *Is your sleep environment comfortable and safe*?"

Importance of prospective diary

- Insomnia is a subjective disorder (APA, 2013), so perception is what you are treating
- Diary created with patient groups (Carney et al., 2012)
- Diary correlates highly with PSG and actiwatch (Maich, Lachowski, & Carney, 2016)
  - Compared to PSG, Fitbit overestimates sleep time by +1 hr.; Fitbit and actiwatch in poor sleepers even greater error (Montgomery-Downs, Insana & Bond, 2012).
  - PSG is not indicated in insomnia (Littner et al., 2003)
    - Conditioned arousal, sleep disruptive effects of lab etc.

CBT-I Coach

- *CBT-i Coach* developed by the United States' Veteran Affairs
- For those in treatment with healthcare professional
  - not a replacement for *in vivo* therapy
  - Resists feedback when in the clinical range, prompts visit to provider
- High uptake rate (60%) for clinicians using it with patients (Koffel et al., 2018; Kuhn et al., 2016).

Clinical Interview: Obstructive Sleep Apnea

"Do you snore loudly and persistently? Are you sleepy? Has anyone ever seen you stop breathing? Do you have high blood pressure?"

Two or more? Referral (STOP*; Chung et al., 2008)

Correlates of apnea include: BMI over 35 kg/m2? Older than 50 years old? Neck size larger than 17"+ (16"+ women)? Male? Peeing more than 2 times?

*http://www.thoracic.org/assemblies/srn/questionaires/stop-bang.php

Clinical Interview: Circadian Rhythm Disorders

"Have you ever had a sleep schedule that was unusual or undesirable to you, or different from the sleep-wake patterns of most other people you know (for example, working at night and sleeping in the daytime)?"

Shift work, jetlag

"Do you seem to have difficulty staying awake as long as others do? Do you also wake up much earlier than others do?" Opposite for delayed

Clinical Interview Cont'd: Circadian Rhythm Disorders

"When would you like to fall asleep? _____

When do you fall asleep? _____"

"If you could always go to bed early at night and get up early the next day, would you get the amount of sleep you need? If it didn't matter what time you went to bed and got up, would you prefer to keep an early bedtime and early wake-up time?" Verify on the sleep diary for 7 days.

Referral

- Refer to sleep clinics for assessment:
  - Excessive Daytime Sleepiness (i.e., involuntarily falling asleep)
    - Sleep Apnea
    - Periodic Limb Movement Disorder
    - Circadian Rhythm Disorders (e.g., Jetlag, Shiftwork types)
    - Parasomnias

Contraindications for CBT-I?

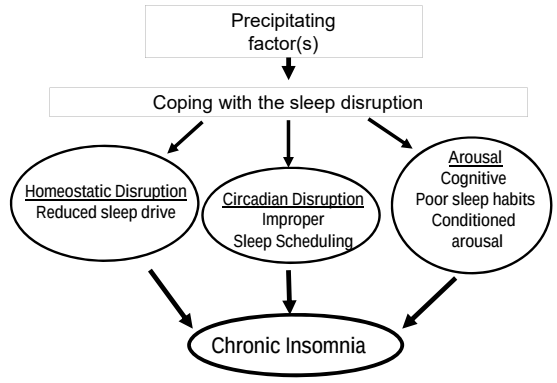
- Current substance abuse disorder (e.g., Currie et al., 2004 alcohol-dependent in remission; Arnedt et al., 2011 alcohol-dependent)
- Psychologically or medically unstable (e.g., crisis)
- Bipolar illness* (Harvey et al., 2015)
- Excessive daytime sleepiness**
- Untreated or inadequately treated apnea
  - Adequate treatment = At least 4 hours a night on at least 75% of nights associated with severe daytime sleepiness

Finishing up assessment

- Referral? (lists maintained @ css-scs.ca; aasm.org; behavioralsleep.org)
- Schedule first session (ideally, two weeks later)
- Introduce sleep diary (reinforce importance, no clock-watching, no perfectionism, go over instructions, no tracking devices)
- CBT-I Coach app or consensussleepdiary.com

Sleep Regulation

Recommendations will appear obtuse without an understanding of the sleep mechanisms they leverage



(Spielman, 1987; Webb, 1988)

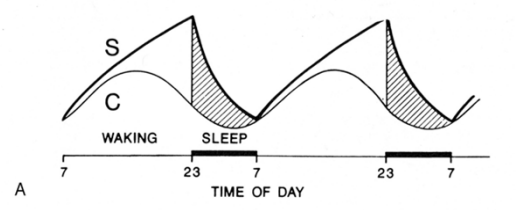
Psychoeducation

- Most effective collaboratively
- No matter what brought you to this point…
- Those with comorbid insomnia have the same perpetuating factors as those without
- Restore deep sleep drive, eliminate conditioned arousal and set the clock, and you will recover from chronic insomnia

If we can understand how our sleep systems work

WE CAN LEVERAGE THEM TO SLEEP BETTER

Homeostatic Mechanism Balances Sleep and Wakefulness



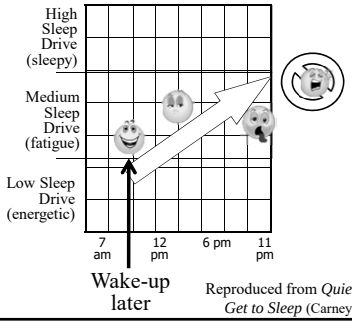
Homeostatic Perpetuating Factors

- We need to "build" sleep drive to have continuous and quality sleep, therefore behaviors that will have a negative impact on this build-up will be:
  - Spending increased time in bed relative to how much sleep you can currently produce
    - Napping; Sleeping-in; Going to bed early
  - Inactivity (Carney et al., 2006)

"I spend about 8 hours in bed every night"

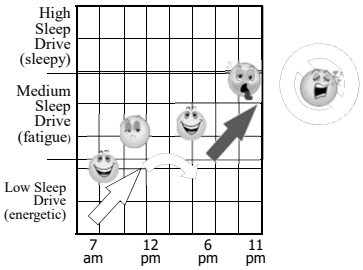
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bedtime	11:00 pm	11:30 pm	11:05 pm	10:35 pm	10:55 pm	12:15 am	10:15 pm
Time to fall asleep	25	20	40	60	35	15	95
Time awake during night	20	25	15	35	20	45	60
Wake time	7 am	7 am	7 am	7 am	7 am	8:40 am	7:50 am
Rise time	7:15 am	7:20 am	7 am	7:25 am	7:15 am	10:50 am	11:45 am

Impact of sleeping-in on subsequent sleep drive



Reproduced from *Quiet Your Mind and Get to Sleep* (Carney & Manber, 2008)

Nap impact on building sleep drive



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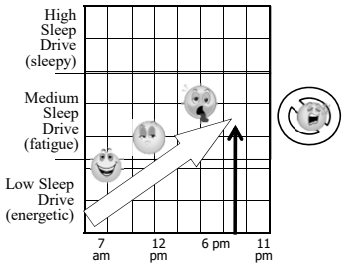
Impact of going to bed early on subsequent sleep drive



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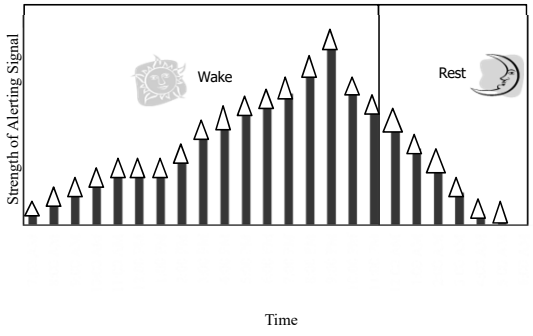
Body Clock Essentials

1. TIMING
- Clock determines timing of sleep especially REM sleep timing AND timing of alertness

2. MANAGING DRIFT
- There is drift in our clock because it is longer than 24 hours
  - Regular bedtimes, regular rise times and regular light exposure "set" the clock and manage drift

Circadian alerting signals (24-hours)



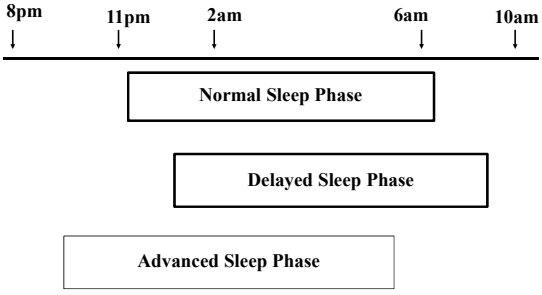
Process C/Circadian Perpetuating Factors

- Optimal sleep is produced during a dynamic, idiosyncratic timing window, therefore the following behaviors would have a negative impact on sleep:
  - Variable timing of going to bed and getting out of bed (social jetlag)
  - Sleeping outside of your optimal window (i.e., keeping late hours if you are a lark or getting up early if you are an owl)

"I go to bed around 11 and get up at 6 every morning"

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bedtime	11:00 pm	12:30 am	1:05 am	10:35 pm	12:55 am	2:15 am	10:15 pm
Time to fall asleep	25	20	40	60	35	15	95
Time awake during night	20	25	15	35	20	45	60
Wake time	6 am	6 am	6 am	6 am	6 am	8:40 am	7:50 am
Rise time	7:15 am	7:20 am	7 am	7:25 am	7:15 am	10:50 am	11:45 am

Delayed and Advanced Chronotypes



The Third Process: The Arousal System

- The arousal system can override the sleep promoting system
  - allows us adequate respond to dangerous threats
- When overactive, the arousal system interferes with the processes controlling sleep.
  - Conditioned arousal
  - Physiological hyperarousal

Conditioned Arousal

- Ask about "the switch"

Bed (bedroom, bedtime routine)

+

Sleeplessness, tossing, turning, upset

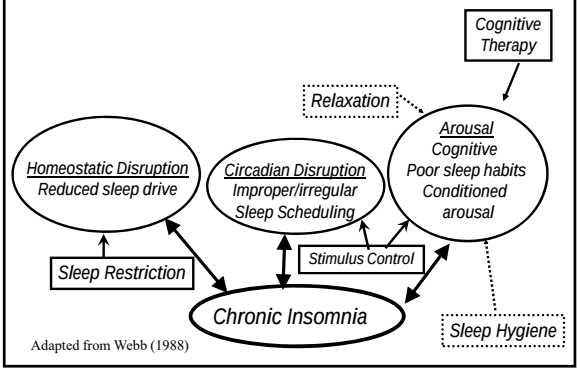
= conditioned arousal

Consider also, hot flashes, nightmares, panic attacks…
Do wakeful activities in bed – train yourself to be awake

Increased Physiological (Hyper)arousal in Insomnia

- Metabolic rate (Kay et al., 2016)
- Sympathetic activation (Gehrman et al., 2016)
- Hypothalamic-Pituitary-Adrenal axis (Minkel et al., 2014)
- Cortical arousal
  - Electroencephalogram and regional brain metabolism (Riedner et al., 2016)
  - Multiple Sleep Latency Testing (Bonnet & Arand, 2010)

Perpetuating Factors and CBT-I



Adapted from Webb (1988)

Why CBT-I for chronic insomnia?

- Same effect sizes but more durable than medications and no polypharmacy risks
- The causal factors differ for chronic versus acute insomnias
- Frontline treatment for chronic insomnia (e.g., Bjorvatn et al., 2017; NIH, 2005; Qaseem et al., 2016)
- It is effective for comorbid insomnias (e.g., Geiger-Brown, et al., 2015)

Components of CBT with Empirical Support

Morin et al. (1999; 2006)

Treatment	# of studies	Classification
CBT w/o relaxation	6	Well-established
CBT with relaxation	8	Well-established
Relaxation Therapy	8	Well-established
Stimulus Control	6	Well-established
Sleep restriction	3	Well-established
Cognitive Therapy	0	Not supported
Sleep Hygiene	3	Not supported

Selected evidence for unaltered CBT-I in MDD

- Mixed psychiatric disorders
  - Lichstein et al., 2000
  - Edinger et al., 2007; 2009
- Depression
  - Morawetz (2001) Case series bibliotherapy
  - Kuo et al. (2001) Case series group CBT
  - Manber and colleagues (2008) RCT CBT
  - BBIT helps with refractory depression and residual insomnia (Watanabe et al., 2011)

Selected evidence for unaltered CBT-I in chronic pain

- CBT-I in pain patients effective (comparable ES to PI trials); durable effects at 3-12 month follow-ups
  - Chronic pain patients with insomnia (Currie et al., 2000)
  - Older adults mixed disorders including RA (Rybarczyk et al., 2002)
  - Mixed outpatient cancer patients in primary care (Espie et al., 2008)
  - Fibromyalgia (Edinger et al., 2005)
  - Osteoarthritis (Vitiello et al., 2009)
  - Chronic neck and back (Jungquist et al., 2010)

Selected evidence in those with trauma

- CBT-I is effective in those with PTSD (e.g., Ulmer, Edinger, & Calhoun, 2011)
- Some have combined CBT-I with nightmare treatment (Davis & Wright, 2006; Germain, Shear, Hall, & Buysse, 2007; Ulmer et al., 2011)

Step-by-Step Guide to CBT-I

Stimulus Control

If wakefulness and the bed have become associated, re-associate bed with sleep by:

1. Going to bed only when sleepy
2. Getting out of bed when unable to sleep
3. Getting out of bed at a consistent time each morning (irrespective of how you slept)
4. Using the bed and bedroom only for sleep (and sex)
5. Refraining from daytime naps

Bootzin (1972)

Sleep Restriction Therapy (SRT)

Matching Time in Bed To Current Sleep Drive

How to Present Rationale

- "If you could only choose one, would you prefer 8 hours of poor quality sleep or 6 hours of deep quality sleep?"
- To improve sleep quality you must increase your sleep drive
  - A strong sleep drive will reduce wakefulness and lead to better quality sleep
- Over time, as your sleep quality improves, the time-in-bed prescription will slowly be extended

Sleep Restriction Therapy (SRT) or Time-in-Bed Restriction

To restore homeostatic sleep drive:

- Match time-in-bed with current average sleep production (add 30 minutes for normal sleep onset latency)
- Once sleep normalizes and there is sleepiness (self-reported or a mean sleep onset latency 10 min or less or a sleep efficiency above 90%) we extend time-in-bed in 15 or 30 minute increments

Spielman et al., 1987

Calculating Total Sleep Time

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bedtime	11:00 pm	11:30 pm	11:05 pm	10:35 pm	10:55 pm	12:15 am	10:15 pm
Time to fall asleep	25	20	40	60	35	15	95
Time awake during night	20	25	15	35	20	45	60
Wake time	7 am	7 am	7 am	7 am	7 am	8:40 am	7:50 am
Rise time	7:15 am	7:20 am	7 am	7:25 am	7:15 am	10:50 am	11:45 am
TIB	8.25	8	8	9	8.25	10.75	13.5
TST	7.25	6.75	7	7	7	7.75	7

Determine Where to Place the Time-In-Bed (TIB) Window

Sleep opportunity window should consider

Eveningness/morningness tendency	Life constraints (e.g., work schedule)

↓

Collaborate to determine out-of-bed (rise) time

Instruct to get out of bed shortly after waking

↓

Determine bedtime based on time-in-bed and rise time

Count back from rise time	Example: Time in bed=6 hours Rise time=6AM → Bedtime=12AM

Sleep extension

- Provide MORE time in bed when sleep indices are normal AND/OR sleepiness:
  - Subjective complaints of sleepiness
  - Sleep efficiency upwards of 90%
  - Sleep onset latencies less than 10 minutes
- Renegotiate where to allot the additional 15-30 minutes. If sleep suffers, scale back, if sleepiness continues and sleep is still ok, increase by another 15-minutes

Would you increase the TIB?

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bedtime	12:00 am	12:30 am	12:30 am	12:00 am	12:30 am	1:30 am	12:15 am
Time to fall asleep	15 min	25 min	20 min	25 min	25 min	20 min	20 min
Time awake during night	10 min	15 min	5 min	10 min	5 min	5 min	15 min
Wake time	6:15 am	6:15 am	6:35 am	6:15 am	6:35 am	8:00 am	7:30 am
Rise time	6:30 am	6:40 am	7:00 am	6:25 am	7:05 am	8:30 am	8:00 am
TIB	**6:30**	**6:10**	**6:30**	**6:10**	**6:35**	**7:00**	**8:15**
Sleep Efficiency:	**84%**	**82%**	**87%**	**91%**	**85%**	**87%**	**87%**

Combined SRT/ Stimulus Control Summary: One-session CBT-I

1. Wake-up and get out of bed at _____ every day.
2. Go to bed when you are sleepy,

   but not before _____.
3. Get up (out of bed) when you can't sleep.
4. Use the bed only for sleeping. Do not read, eat, watch TV, etc. in bed. Sex is the only exception.
5. Avoid daytime napping.

Sleep Hygiene: Focus on Lifestyle Factors

- Caffeine – timing and reduction
- Nicotine reduction/elimination
- Prescribed exercise - timing
- Light bedtime snack (milk, peanut butter)
- Avoid middle of the night eating
- Reduce alcohol, marijuana & other substances
- Optimize environment: light, noise, temperature

Sleep hygiene: Stop marijuana

- Marijuana users believe it is helpful for sleep and may use it for pre-sleep arousal, not sleep per se
  - If they stop, what would you expect would happen?
- We can tell/show them that it is sleep-disruptive:
  - worse objective (i.e., PSG) sleep efficiency, REM abnormalities and longer sleep onset than those who don't use (Bolla et al., 2008)
  - Like alcohol, REMS suppressed in early hours and then REMS rebound later which disrupts sleep continuity/quality overall and can result in strange dreams (e.g., Schierenbeck, Riemann, Berger, & Hornyak, 2008; Van Reen, Jenni & Carskadon, 2006).
  - longer marijuana use (i.e., a month of regular use) suppresses SWS (Freemon, 1982)
- But during abstinence nights, their sleep remains poor so sleep hygiene followers will most certainly not notice a benefit short term
- What about looking at the pros and cons instead?
- What about testing whether they are satisfied after following CBT-I?

COUNTER AROUSAL

First Session CBT-I

1. Wake-up and get out of bed at _____ every day.
2. Go to bed when you are sleepy,

   but not before _____.
3. Get up (out of bed) when you can't sleep.
4. Use the bed only for sleeping. Do not read, eat, watch TV, etc. in bed. Sex is the only exception.
5. Avoid daytime napping.

Five strategies for quieting the mind

1. Increase sleep drive.
   How?
2. Un-train the brain to do it while in bed.
   How?
3. Buffer zone
4. Processing strategies
5. Mindfulness practice

Create a "buffer zone"

- Time to unwind (~ 1 hour) before bedtime
- Transition between goal-oriented activities of the day and quiet, more peaceful time of sleep
  - Those who have hard time staying awake until designated bedtime may have shorter "buffer zone" (e.g., older adults)
  - Those who are delayed sleep phase/teens may have to lengthen their buffer zone

Counting sheep?

- Occupying space in articulatory loop
- So what about sheep?
- Better elaboration strategy? (Waters et al., 2003)
- How about thought suppression?
- Pennebaker strategy? (Harvey & Farrell, 2003)

Scheduling "Thinking Time" with non-pathological worry

- Thinking through one's problems may defuse them (Espie & Lindsay, 1987; Carney & Waters, 2006)
- Set aside time in the evening, not close to bedtime
- Think of the *next*, immediate step towards solving a problem

Concern	Solutions
I have to get the car serviced	1. After this exercise I can look at the calendar to see when I can do this 2. I can ask my wife if she has time

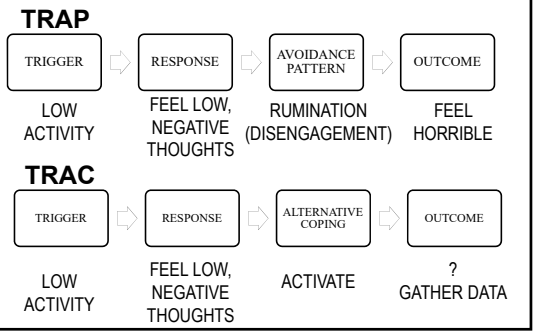
Reproduced from *Overcoming Insomnia: A Cognitive Behavioral Approach* (Edinger & Carney, 2008)

Excessive mentation: Rumination

- Rumination – try to suppress
- Use rumination as a cue for an alternative response
  - Day: rumination as a cue for activation, mindfulness, or Thought Records
  - Night: rumination as a cue for Stimulus Control

Out of a TRAP → Back on TRAC

Martell, Dimidjian, & Herman-Dunn (2010)



Mindfulness

- Mindfulness may help with arousal
- Attentional issues similar to other disorders characterized by repetitive thought
- Positive sleep effects for other studies (Carlson & Garland, 2005; Shapiro et al., 2003; Teasdale et al., 2000); Efficacy data for CBT+mindfulness pilot (Ong, Shapiro & Manber, 2008; Ong et al., 2018)
- Cultivate a practice, not a mindfulness pill

Relaxation*

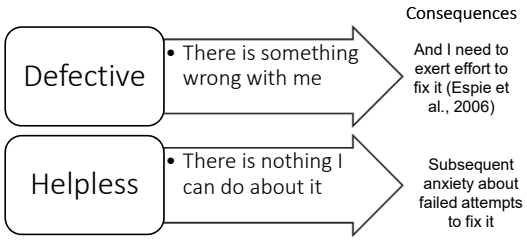
- Progressive muscle relaxation
- Diaphragmatic breathing
- Breathing meditation
- Guided imagery

*Relaxation therapy is a well-established therapy with mod. ES
Morin et al, 1999; Morin et al, 2006

Thought Records
Socratic questioning
Behavioural experiments

COGNITIVE THERAPY

Two basic (transdiagnostic) core beliefs



Beck (1999)

Cognitive Therapy: Thought Records

Situation	Mood (Intensity 0-100%)	Thoughts	Evidence *for* the thought	Evidence *against* the thought	Adaptive/Coping statement	Do you feel any differently?
Coming back to the office from my lunch break and noticed how tired I was	*Tired (100%)* *Upset (100%)* *Worried (80%)*	*I'm going to get sick if I keep going like this* *I can't keep going on like this* *Something really terrible is going to happen if this doesn't get resolved.* *I could get fired and eventually become homeless*	*I'm not exercising any longer* *I don't feel like doing things* *I got into trouble for coming to work late last month.*	*I usually start to feel a little better later in the afternoon* *99.9% of the time I am on-time and have no problems at work* *My sleep problems have been going on for years and nothing bad has happened* *My job is secure—I am not going to be fired*	*Although I tend to feel lousy at different times during the day, the reality is that I always make it through and nothing bad has ever happened as a result of the insomnia*	*Tired (90%)* *Upset (50%)* *Worried (45%)*

Socratic Questioning

- What would you tell a loved one in the same situation? Why would you tell them something different?
- Could focusing on the negative consequences of sleep have a negative effect on your sleep?
  - What <u>other</u> factors affect your mood or functioning during the day? (More on this in a moment).
- Reinforce positive instances of coping strategies.
- Orient towards coping: Sounds like you anticipate being tired this week, what strategies should we put into place?" (More on this in behavioral experiments)
- Could cancelling activities/plans have a negative effect on your sleep?

Cognitive Therapy Behavioral Experiment

Belief	**Alternative?**	**Experiment**
I have a limited store of energy	Conserving energy may increase fatigue	Expend versus conserve
Poor sleep is dangerous	I may be able to cope reasonably after poor sleep	Restrict sleep and monitor coping
I can't control sleep because my mind is too active	Perhaps because there isn't time to process the day?	Constructive worry in evenings versus status quo
Being tired makes me look bad	Perhaps others are not particularly attuned to this	Took series of photos and tested people's ratings
Monitoring how I feel helps me to keep track, in case I have to make an adjustment	Monitoring increases the likelihood that you will perceive minor changes in energy	Monitor external stimuli and mood for two hours and then internal stimuli for 2 hours
I need to nap to get through the day	If I don't nap, my nighttime sleep will improve, and I can cope	Monitor napping, tiredness and coping for one week of naps and one week without

Ree & Harvey, 2004

Explore what contributes to how one feels during the day

- Jetlag
- Level of activity
- Hydration
- Caffeine withdrawal
- Residual symptoms of sleep or antidepressant medication

Paradoxical Intention

- "Try to remain awake in bed as long as possible tonight."
- Anxiety and sleep effort reduced through paradox
- Likely more suited for sleep onset difficulties (Broomfield & Espie, 2003)

What to do with this diary

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bedtime	12:00 am	12:30 am	12:30 am	12:00 am	12:30 am	1:30 am	12:15 am
Time to fall asleep	No sleep	No sleep	No sleep	No sleep	No sleep	No sleep	No sleep
Time awake during night	No sleep	No sleep	No sleep	No sleep	No sleep	No sleep	No sleep
Wake time	6:30 am	6:40 am	7:00 am	6:25 am	7:05 am	8:30 am	8:00 am
Rise time	6:30 am	6:40 am	7:00 am	6:25 am	7:05 am	8:30 am	8:00 am

CBT-I corrects discrepancy between objective & subjective

- CBT-I helps with subjective-objective sleep discrepancy
- Crönlein and colleagues (2019) collected 3 nights (2 baseline nights and 1 night after a 14-day inpatient CBT-I program) of PSG in-lab.
  - Psychoeducation explicitly covered subjective-objective sleep discrepancy.
  - Improvement in subjective-objective sleep discrepancy parameters after CBT-I.
- Sleep restriction eliminates discrepancy
- Cognitive restructuring with a behavioural experiment and feedback (Harvey & Tang, 2012)

CBT-I corrects hyperarousal

- Kim and colleagues (2019) measured regional brain activity in response to auditory stimuli and white noise sound (neutral) pre- and post CBT-I using functional magnetic resonance imaging (FMRI).
- After CBT-I, decreased regional brain activity in left middle temporal and left middle occipital gyrus in response to SS (no change with neutral)
- DBAS decrease after CBT-I correlated with decrease in brain activity in response to SS (not neutral).
- Cortical hyperactivity/hyperarousal decreases after CBT-I: cognitive restructuring of unhelpful beliefs about sleep operates on hyperarousal

Termination issues

RELAPSE PREVENTION

Relapse Prevention Session

- Process termination thoughts
- Letter to future [relapsed] self
- Reminder of what worked
- Adherence to this treatment has a very high success rate
- In most cases, most indices if not all will be in the healthy range
- This means they can decide about relaxing some rules but they need a plan

Letter to Self: Homework

- Homework: "Now that you have recovered, please write a letter to yourself, about what you would want this future self to remember if they experienced a worsening"
- It's a reminder of recovery for those who don't see it that way, and a way to explore that idea
- Therapist prepares a template of a letter (can be used across clients)

Four Session Outline

Week	Therapeutic Activities
1	Diagnostic and treatment planning assessment, Assign diaries
2	Completion of sleep diaries
3	Psychoeducation, Stimulus Control, Sleep Restriction Therapy, Sleep Hygiene
4	At-home implementation of strategies.
5	Troubleshoot adherence to homework and determine if changes are necessary to schedule. Begin cognitive therapy, perhaps counterarousal strategies/relaxation therapy.
6	At-home implementation of strategies.
7	Troubleshoot adherence and determine if changes are necessary to schedule. Continue with cognitive therapy, add counterarousal strategies (if it wasn't added at session 2). Introduce termination issues.
8	At-home implementation of strategies.
9	Troubleshoot adherence. Determine if changes are necessary to schedule. Finish cognitive therapy. Termination issues and relapse prevention.

Group Format Individual

Week (after assessment)		
1	Psychoeducation, SC and Sleep Hygiene	Psychoeducation, SC, SRT, Sleep Hygiene (bring diaries)
2	Troubleshoot adherence, SRT (diary swap)	
3	Troubleshoot adherence, determine if changes necessary to schedule, add counterarousal	Troubleshoot adherence, determine if changes necessary to schedule, add counterarousal and cognitive therapy
4	Troubleshoot adherence, determine if changes necessary to schedule, add cognitive therapy	
5	Troubleshoot adherence, determine if changes necessary to schedule, continue with cognitive therapy, introduce termination issues, relapse prevention homework	Troubleshoot adherence, determine if changes necessary to schedule, continue with cognitive therapy, introduce termination issues, relapse prevention homework
6		
7	Troubleshoot adherence, determine if changes necessary to schedule, cognitive therapy, termination issues and relapse prevention	Troubleshoot adherence, determine if changes necessary to schedule, cognitive therapy, termination issues and relapse prevention

Edinger & Carney, 2015

TROUBLESHOOTING

Clues To Trick Sleep Systems to Regulate

Clue

- Diary: ↑ TIB, naps, lingering in morning, long SOL, broken sleep pattern
- Diary: ↑ SOL, ↑ time awake while in bed, interview reveals "switch" experience
- More than an hour variability rise/bedtimes and fatigue complaint
- Sleep effort behaviours: (e.g., into bed early with long SOL, rituals etc.)

Trick

- Use the average TST and keep to that amount only (+30 min.) to send sleepy message
- Stimulus control; combine it with mean TST rule above to work *very* quickly
- Regulate schedule using stimulus control (fixed rise time) and time-in-bed restriction
- Behavioural experiments to test premise that sleep effort hurts, not helps

TIB = time-in-bed; SOL = sleep onset latency; TST = total sleep time

Sleep Compression

An alternative to SRT wherein time-in-bed (TIB) is restricted *gradually*

→ Reduce TIB 30 min/week from actual TIB

Example: if TIB = 8 hrs and Average TST = 6 hrs

- Standard SRT → TIB = 6.5 hours
- Sleep Compression → TIB = 7.5 hours for week 1
  TIB = 7.0 hours for week 2, etc.
  Stop when sleep efficiency (SE) is high and/or sleepiness

(e.g., Lichstein et al., 2001; Riedel, Lichstein & Dwyer, 1995)

Counter-Control

- Rule #2 may be ill-advised under some circumstances (risk of falls, housing issues, over-zealous about getting out of bed , when secondary goal is to overcome fear of bed, e.g., some clients with PTSD)
- What if key is to disrupt sleep effort?
- Maybe stimulus control but switch rule #2 with instruction to give up the effort to sleep

(Davies e al., 1986; Hoelscher & Edinger, 1988; Zwart & Lisman, 1979)

Considerations for chronic pain

- Chronic pain lightens sleep; it doesn't prevent it
- Does pain-related sedentary lifestyle contribute to sleep problem?
  - Decreased sleep drive (↑ activity, manageably is a goal of CBT-P)
- Have you screened for sleep apnea? Comorbidity is up to 75%
- Is pain adequately managed?
  - Ambivalence about pain meds may interfere with optimal pain management at night
- Is the bed used for nocturnal sleep also used for rest during the day? Is resting supine? Dozing?
- Do beliefs about pain and sleep contribute to sleep effort?
- Can't get up? Try counter control

Davies, Lacks, Storandt, Bertelson (1986); Hoelscher & Edinger (1988)

"What should I do when out of bed?"

Considerations for Anxiety Disorders

- Treatment as usual for anxiety disorders
- Obsessive Compulsive Disorder focus on pre-sleep rituals
- Partial sleep deprivation lowers panic thresholds (Mellman & Uhde, 1989; Roy-Byrne, Uhde, & Post, 1986)
- Perhaps we should restrict time spent in bed to a lesser extent in those with frequent nocturnal panic (Smith, Huang, & Manber, 2005)?
  - Sleep compression
  - Focus on stimulus control, even counter control or counter arousal

Considerations for trauma

- Most targets same:
  - erratic sleep scheduling
  - daytime napping
  - alcohol to aid sleep
  - hyperarousal as bedtime approaches
  - conditioned arousal
- Some unique targets:
  - they don't spend excessive time in bed (they avoid)
  - their unhelpful beliefs are NOT about sleep loss, they are about sleepiness/sleep as threat
  - there may be hypervigilance before/during sleep – on guard/checking

Trauma sleep assessment

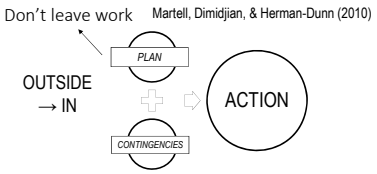
Nightmares

- Nightmare awakenings require stimulus control or counter control (along with whatever coping skills you are practicing)
- Those interested in nightmare treatment can refer to original cites (e.g., Krakow *JAMA* 2001) or published protocols (e.g., Carney & Edinger, *Insomnia and Anxiety*, Springer 2010)

Considerations for Depression

- Rationale not compelling/understood
- The need for contingencies

Outside-in approach to fatigue



	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bedtime	9:00 pm	11:30 pm	11:05 pm	10:35 pm	10:55 pm	11:15 pm	11:15 pm
Time to fall asleep	25	20	40	60	35	15	95
Time awake during night	20	25	15	35	20	45	60
Wake time	8:30 am	7:30 am	7 :30 am	7:15 am	7:20 am	8:40 am	8:50 am
Rise time	9:15 am	8:20 am	8:15 am	8:25 am	7:35 am	8:50 am	11:45 am

Presenting sleep complaint is fatigue: what accounts for it?

Mean Time in Bed = 10 hours
Mean Total Sleep Time = 7.93 hours; Sleep onset latency = 42 minutes
Mean Wakefulness after sleep onset (WASO) = 32 minutes
Sleep Efficiency (Time asleep/time-in-bed) = 79%

Sleep/the Bed as an escape

- Avoidance maintains low mood
- Limits access to positive reinforcement
- Escape becomes confining (world shrinks) Explore pros and cons (and ambivalence) with isolation
- Psychoeducation: poor sleep drive, ↑fatigue, conditioned arousal

*

"I *can't* get up at the designated rise time"

- Find out why.

Coping Card Example

Thought

- "I cannot get out of bed at 7:30 AM"

Coping Card

- I know this will help improve my sleep.
- I will go the coffee shop around the corner and read the paper. I enjoy doing this.
- I will meet with Joe at the Gym at 8:00AM on Mondays and Wednesdays.
- It is hard, but I have to do it if I want to sleep better.
- I can handle getting out of bed at 7:30AM.

Is Hypnotic Discontinuation Necessary?

- No. Evidence that CBT-I and meds can be paired, with continued CBT-I support during taper (Morin et al., 2009)
- No advantage to pairing (Jacobs et al., 2004)
- But, eliminate contingent sleep med use - undermines self-efficacy
  - Collaborate with doctor to stop or maintain consistent daily dose (lrd) and timing throughout treatment
- ↑ Cognitive Therapy; safety issues

Case Study

- Client is a 78 year old, first generation Chinese Canadian man, recently widowed (just over a year), retired family doctor (almost two years) with 3 adult children living in Toronto
- He presents with sleep maintenance insomnia, fatigue, low mood, concentration difficulties, recent mild weight gain, loneliness
- Hypertension; prostate cancer 7 years ago

Timeline of symptoms

Age 67	Age 71	Age 76	Age 77	Age 78
Practicing family doctor HTN: diuretic Peeing >4x night	Prostate cancer treatment HTN: diuretic Peeing >5x night Insomnia Fatigue	Retires HTN: diuretic Peeing >3x night Insomnia worsens Less activity Feels bored Low mood *PSG –ve for OSA	Wife dies (aneurism) HTN: diuretic Peeing >3x night Insomnia worsens Sleep meds Even less activity, severe loss of social contacts Feels bored Low mood	Retired Widowed HTN: diuretic Peeing >3x night Insomnia Disorder MDD Weight gain (5 lbs) Sleep meds Very little activity, severe loss of social contacts Bored

*PSG is overnight polysomnography test
OSA is Obstructive Sleep Apnea

Assessment data

- Insomnia severity index = 24 (clinical cutoff>10)
- Fatigue severity scale = 6.6 (clinical cutoff>3)
- Dysfunctional beliefs and attitudes about sleep scale = 7.3 (clinical cutoff>3.4)
- Epworth sleepiness scale = 6 (clinical cutoff>10)
- STOPBANG = 3 (age, male and hypertension) – referred; -ve previous study
- Beck Depression Inventory 2 = 29 (clinical cutoff>17)
- Sleep diary data descriptives:
  - Eszopiclone 1 mg on 2 nights; Eszopiclone 2 mg on one night (doctor wants this discontinued because of cognitive complaints)
  - 2-4 caffeinated beverages (black tea) per day (latest 6 pm)
- Interview reveals criteria met for DSM5 Insomnia Disorder and Major Depressive Disorder

Sleep Diary data

	MON	TUES	WED	THUR	FRI	SAT	SUN
INTO BED	9 pm	8:45 pm	8:30 pm	9:15 pm	8 pm	9 pm	8:30 pm
SLEEP ATTEMPT	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm
SOL	35 min	45 min	40 min	30 min	1 hour	45 min	30 min
WASO	90 min	1 hour	3 hours	2 hours	90 min	1 hr 15 min	2 hours
WAKE UP	4 am	4:15 am	4:30 am	4:15 am	5 am	4:30 am	4:15 am
OUT OF BED	7 am	7 am	7 am	7 am	7 am	7 am	7 am
NAPS	1 hour	45 min	1 hour	1 hour	45 min	30 min	30 min
TIB	10 hrs	9.75	9.5	9.75	11	9.5	12
TST	4.5 hrs	5	3.33	4.25	5	5	4.25

Case Formulation Form: Factors weakening sleep drive

Domains	Targets
1. Sleep Drive: Are there any factors weakening the sleep drive?	☐ Time-in-bed is 30 minutes greater than average total sleep time? ☐ Any evidence of dozing? ☐ Any evidence of napping? ☐ Any substances that block sleep drive (e.g., caffeine)? ☐ Evidence of decreased physical activity in a 24-hour period? ☐ Lingering in bed greater than 30 minutes post-wake in the morning?

Sleep Drive on the diary?

	MON	TUES	WED	THUR	FRI	SAT	SUN
INTO BED	9 pm	8:45 pm	8:30 pm	9:15 pm	8 pm	9 pm	8:30 pm
SLEEP ATTEMPT	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm
SOL	35 min	45 min	40 min	30 min	1 hour	45 min	30 min
WASO	90 min	1 hour	3 hours	2 hours	90 min	1 hr 15 min	2 hours
WAKE UP	4 am	4:15 am	4:30 am	4:15 am	5 am	4:30 am	4:15 am
OUT OF BED	7 am	7 am	7 am	7 am	7 am	7 am	7 am
NAPS	1 hour	45 min	1 hour	1 hour	45 min	30 min	30 min
TIB	10 hrs	9.75	9.5	9.75	11 hrs	9.5	12
TST	4.5 hrs	5 hrs	3.33	4.25	5	5	4.25

Case Formulation Form: Factors weakening sleep drive

Tools?	Targets
• Sleep restriction or sleep compression • Stimulus Control for the naps • Scheduled activity	☐ Time-in-bed is 30 minutes greater than average total sleep time? ☐ Any evidence of dozing? ☐ Any evidence of napping? ☐ Any substances that block sleep drive (e.g., caffeine)? ☐ Evidence of decreased physical activity in a 24-hour period? ☐ Lingering in bed greater than 30 minutes post-wake in the morning?

	MON	TUES	WED	THURS	FRI	SAT	SUN
4 am	IN BED 8	IN BED 7	IN BED 8	IN BED 7	IN BED 8	IN BED 7	IN BED 8
5 am	TV IN BED 7	IN BED 8	IN BED 7	IN BED 8	IN BED 8	IN BED 7	IN BED 7
6 am	IN BED 7	IN BED 8	IN BED 7	IN BED 7	IN BED 7	IN BED 7	IN BED 8
7 am	SHOWER 5	COMPUTER 8	BRFT 6	PHONE 5	TEA/PAPER 6	READING 5	IN BED 8
8 am	BRFT 7	TV 8	READING 6	SHOWER 4	CAFÉ 2	TV 8	READING 8
9 am	MARKET 4	GARDENING 2	READING 7	WALK 3	SHOWER 4	READING 7	SHOWER 6
10 am	GARDENING 2	GARDENING 2	READING 7	SHOP 3	LUNCH 5	READING 6	BRFT 7
11 am	GARDENING 2	SHOWER 3	READING 7	BILLS 5	TV 8	READING 7	NAP 7
12 pm	TEA 5	NAP	NAP	GARDENING 3	COUCH 8	COMPUTER 8	NAP
1 pm	NAP	COMPUTER 8	SHOWER 6	COMPUTER 8	COUCH 8	COMPUTER 8	COMPUTER 8
2 pm	READING 5	COMPUTER 8	READING 6	NAP	NAP	NAP	COMPUTER 8
3 pm	COOK 4	READING 7	READING 7	READING 8	READING 8	COMPUTER 8	DINNER 4
4 pm	DINNER 5	READING 8	NAP 6	READING 7	READING 8	READING 7	READING 5
5 pm	READING 8	DINNER 4	DINNER 5	PHONE 4	DINNER 5	READING 6	PHONE 3
6 pm	TV 6	READING 7	READING 6	DINNER 4	READING 7	READING 7	READING 6
7 pm	TV 6	TV 7	COMPUTER 6	IN BED 7	READING 7	DINNER 7	READING 8
8 pm	TV 6	TV 6	TV 6	TV 6	TV IN BED 8	TV 8	TV 7
9 pm	TV IN BED 9	TV IN BED 6	TV IN BED 7	TV IN BED 6	TV IN BED 7	TV IN BED 8	IN BED 8
10 pm	TV IN BED 9	TV IN BED 7	TV IN BED 7	TV IN BED 8	TV IN BED 8	TV IN BED 8	TV IN BED 8

	MON	TUES	WED	THURS	FRI	SAT	SUN
4 am							
5 am							
6 am							
7 am	SHOWER 5	COMPUTER 8	BRFT 6	PHONE 5	TEA/PAPER 6	READING 5	
8 am	BRFT 7	TV 8	READING 6	SHOWER 4	CAFÉ 2	TV 8	READING 8
9 am	MARKET 4	GARDENING 2	READING 7	WALK 3	SHOWER 4	READING 7	SHOWER 6
10 am	GARDENING 2	GARDENING 2	READING 7	SHOP 3	LUNCH 5	READING 6	BRFT 7
11 am	GARDENING 2	SHOWER 3	READING 7	BILLS 5	TV 8	READING 7	
12 pm	TEA 5			GARDENING 3	COUCH 8	COMPUTER 8	
1 pm		COMPUTER 8	SHOWER 6	COMPUTER 8	COUCH 8	COMPUTER 8	COMPUTER 8
2 pm	READING 5	COMPUTER 8	READING 6				COMPUTER 8
3 pm	COOK 4	READING 7	READING 7	READING 8	READING 8	COMPUTER 8	DINNER 4
4 pm	DINNER 5	READING 8		READING 7	READING 8	READING 7	READING 5
5 pm	READING 8	DINNER 4	DINNER 5	PHONE 4	DINNER 5	READING 6	PHONE 3
6 pm	TV 6	READING 7	READING 6	DINNER 4	READING 7	READING 7	READING 6
7 pm	TV 6	TV 7	COMPUTER 6		READING 7	DINNER 7	READING 8
8 pm	TV 6	TV 6	TV 6		TV IN BED 8	TV 8	TV 7
9 pm							
10 pm							

Case Formulation Form: Factors weakening the clock

Domains	Targets
2. Biological clock: Are there factors weakening the signal from the biological clock?	□ An hour or more variability in rise time □ An hour or more variability in bedtime □ Are they a night owl keeping an early bird's schedule, or reverse?

Circadian targets on the Sleep Diary?

	MON	TUES	WED	THUR	FRI	SAT	SUN
INTO BED	9 pm	8:45 pm	8:30 pm	9:15 pm	8 pm	9 pm	8:30 pm
SLEEP ATTEMPT	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm
SOL	35 min	45 min	40 min	30 min	1 hour	45 min	30 min
WASO	90 min	1 hour	3 hours	2 hours	90 min	1 hr 15 min	2 hours
WAKE UP	4 am	4:15 am	4:30 am	4:15 am	5 am	4:30 am	4:15 am
OUT OF BED	7 am	7 am	7 am	7 am	7 am	7 am	7 am
NAPS	1 hour	45 min	1 hour	1 hour	45 min	30 min	30 min
TIB	10 hrs	9.75	9.5	9.75	11	9.5	12
TST	4.5 hrs	5	3.33	4.25	5	5	4.25

Case Formulation Form: Factors weakening the clock

Tools?
- Stimulus Control to set the schedule based on:
- Sleep restriction time-in-bed prescription
- Early morning light exposure for delayed and evening light for advanced
- Scheduled activities in morning for delayed and evening activities for advanced

Targets
□ An hour or more variability in rise time □ An hour or more variability in bedtime □ Are they a night owl keeping an early bird's schedule, or reverse?

Case Formulation Form: Evidence of hyperarousal

Domains	Targets
3. Arousal: Any evidence of hyperarousal? Any behaviors engaged to "produce sleep" (i.e., sleep effort)?	□ Rituals to produce sleep even when sleep continues to be bad, e.g., no alarm clock, sleeping separate from bed partner, knockout shades, white noise machine/masks, tv…? □ Are they worried about sleep? □ Are they worried about other things (in bed)? □ Are they wide awake upon getting into bed? □ Do they stay in bed when awake? □ Do they feel frustrated/anxious/distressed while awake in bed?

Potential Sleep Effort on the Sleep Diary?

	MON	TUES	WED	THUR	FRI	SAT	SUN
INTO BED	9 pm	8:45 pm	8:30 pm	9:15 pm	8 pm	9 pm	8:30 pm
SLEEP ATTEMPT	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm	9:30 pm
SOL	35 min	45 min	40 min	30 min	1 hour	45 min	30 min
WASO	90 min	1 hour	3 hours	2 hours	90 min	1 hr 15 min	2 hours
WAKE UP	4 am	4:15 am	4:30 am	4:15 am	5 am	4:30 am	4:15 am
OUT OF BED	7 am	7 am	7 am	7 am	7 am	7 am	7 am
NAPS	1 hour	45 min	1 hour	1 hour	45 min	30 min	30 min
TIB	10 hrs	9.75	9.5	9.75	11	9.5	12
TST	4.5 hrs	5	3.33	4.25	5	5	4.25

Case Formulation Form: Evidence of hyperarousal

Tools?	Targets
• Stimulus Control • Behavioral experiment • Counter-arousal strategies	□ Rituals to produce sleep even when sleep continues to be bad, e.g., no alarm clock, sleeping separate from bed partner, knockout shades, white noise machine/masks, tv…? □ Are they worried about sleep? □ Are they worried about other things (in bed)? □ Are they wide awake upon getting into bed? □ Do they stay in bed when awake? □ Do they feel frustrated/anxious/distressed while awake in bed?

Case Formulation Form: Unhelpful sleep behaviors?

Tools?	Targets
• Sleep hygiene • Medication consult	□ Excessive or late caffeine? □ Alcohol? □ Marijuana? □ Short-acting sleeping pills? □ Nocturnal eating? □ Vigorous evening exercise? 2-4 caffeinated beverages (black tea) per day (latest 6 pm)

Case Formulation Form: Medications

Domains	Targets
Tools? • Medication consultation • Psychoeducation • Cognitive therapy	Sedating antidepressant producing daytime sedation? His diuretics cause him to get up to pee 2-3 times per night If he remained on the sleep meds, there might have been some concern

Case Formulation Form: Comorbidities

Domains	Targets
6. Comorbidities: Any comorbidities that impact sleep?	❑ Sleep apnea, if yes, is it adequately treated? ❑ Restless Leg Syndrome, if yes, is it adequately treated? ❑ Periodic Limb Movement, if yes, is it adequately treated? ❑ Chronic pain, if yes, is it adequately treated? ❑ PTSD ❑ Others? STOPBANG = age, sex and hypertension; ESS = 6; maintenance insomnia Major Depressive Disorder

TIB restriction and activation

	MON	TUES	WED	THURS	FRI	SAT	SUN
4 am							
5 am							
6 am							
7 am	SHOWER 5	COMPUTER 8	BRFT 6	PHONE 5	TEA/PAPER 6	READING 5	
8 am	BRFT 7	TV 8	READING 6	SHOWER 4	CAFÉ 2	TV 8	READING 8
9 am	MARKET 4	GARDENING 2	READING 7	WALK 3	SHOWER 4	READING 7	SHOWER 6
10 am	GARDENING 2	GARDENING 2	READING 7	SHOP 3	LUNCH 5	READING 6	BRFT 7
11 am	GARDENING 2	SHOWER 3	READING 7	BILLS 5	TV 8	READING 7	
12 pm	TEA 5			GARDENING 3	COUCH 8	COMPUTER 8	
1 pm		COMPUTER 8	SHOWER 6	COMPUTER 8	COUCH 8	COMPUTER 8	COMPUTER 8
2 pm	READING 5	COMPUTER 8	READING 6				COMPUTER 8
3 pm	COOK 4	READING 7	READING 7	READING 8	READING 8	COMPUTER 8	DINNER 4
4 pm	DINNER 5	READING 8		READING 7	READING 8	READING 7	READING 5
5 pm	READING 8	DINNER 4	DINNER 5	PHONE 4	DINNER 5	READING 6	PHONE 3
6 pm	TV 6	READING 7	READING 6	DINNER 4	READING 7	READING 7	READING 6
7 pm	TV 6	TV 7	COMPUTER 6		READING 7	DINNER 7	READING 8
8 pm	TV 6	TV 6	TV 6		TV IN BED 8	TV 8	TV 7
9 pm							
10 pm							

Bereavement

- Misses “their life”
- Friends, having meals together, tai chi in the park with another couple
- Forgets about medications, used to have reminders
- Nighttime is lonely
- She used to organize kids visiting

Activation plan for depressed mood, fatigue and sleep

- Reinstate social zeitgebers: morning showers, breakfast, walk, community centre, friends, family
- Reconnect with people
- Community centre has a support group, Chinese chess, dance, music
- Accept Board invitation; wanted to run for President of a medical organization

Transformation

	MON	TUES	WED	THURS	FRI	SAT	SUN
4 am	SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	SLEEP
5 am	BRFT	BRFT	BRFT	BRFT	BRFT	BRFT	BRFT
6 am	SHOWER	SHOWER	SHOWER	SHOWER	SHOWER	SHOWER	SHOWER
7 am	WALK	WALK	WALK	WALK	WALK	WALK	WALK
8 am	SENIOR CTR	SENIOR CTR	SENIOR CTR	SENIOR CTR	SENIOR CTR	SENIOR CTR	SENIOR CTR
9 am							
10 am	MARKET			BILLS			
11 am	GARDENING	GARDENING	GARDENING	GARDENING	GARDENING	GARDENING	GARDENING
12 pm	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
1 pm	TAI CHI	TAI CHI	TAI CHI	TAI CHI	TAI CHI	TAI CHI	TAI CHI
2 pm							
3 pm							
4 pm							
5 pm	COOK	COOK	COOK	COOK	COOK	MEET FRIEND	COOK
6 pm	DINNER	DINNER	DINNER	DINNER	DINNER	DINNER	DINNER
7 pm	TIDYING	TIDYING	TIDYING	TIDYING	TIDYING	TIDYING	TIDYING
8 pm	SOCIAL CALL	SOCIAL CALL	SOCIAL CALL	SOCIAL CALL	SOCIAL CALL	SOCIAL CALL	SOCIAL CALL
9 pm	READING	READING	READING	READING	READING	READING	READING
10 pm	TV	TV	TV	TV	TV	TV	TV

Case Formulation Form: Comorbidities

Tools?

- Consult with physician about adequate symptom management
- Troubleshooting / adaptation
- Medication consultation
- Concurrent treatment?

Targets

- ❑ Sleep apnea, if yes, is it adequately treated?
- ❑ Restless Leg Syndrome, if yes, is it adequately treated?
- ❑ Periodic Limb Movement, if yes, is it adequately treated?
- ❑ Chronic pain, if yes, is it adequately treated?
- ❑ PTSD
- ❑ Others?

date	into bed (1)	sleep attempt	sol (3)	nwak (4)	waso (5)	woke (6a)	out of bed (7)	nap/rest (11b)	tib (calc)	term waso (calc)	tst	se (%)	
session 1													
02/17/20	21.00	21.50	0.58	2.00	1.50	4.00	7.00	1.00	10.00	3.00	4.42	0.44	
02/18/20	20.75	21.50	0.75	1.00	1.00	4.25	7.00	0.75	9.75	2.75	5.00	0.51	
02/19/20	20.50	21.50	0.67	2.00	3.00	4.50	7.00	1.00	9.50	2.50	3.33	0.35	
02/20/20	21.25	21.50	0.50	3.00	2.00	4.25	7.00	1.00	9.75	2.75	4.25	0.44	
02/21/20	20.00	21.50	1.00	2.00	1.50	5.00	7.00	0.74	11.00	2.00	5.00	0.45	
02/22/20	21.00	21.50	0.75	4.00	1.25	4.50	7.00	0.50	9.50	2.50	5.00	0.53	
02/23/20	20.50	21.50	0.50	1.00	2.00	4.25	8.50	0.50	12.00	4.25	4.25	0.35	
Means	**1.28**	**0.00**	**0.68**	**2.14**	**1.75**	**1.00**	**1.50**	**0.71**	**10:13**	**2.82**	**4.46**	**0.44**	
	1:15	0:0	0:41	2:9	1:45	1:0	1:30			2:49	4:28		

No naps (tai chi replaced)

Evening activation

date	into bed (1)	sleep attempt	sol (3)	nwak (4)	waso (5)	woke (6a)	out of bed (7)	nap/rest (11b)	tib (calc)	term waso (calc)	tst	se (%)	
session 3													
03/14/20	22.50	22.50	0.33	2.00	0.75	4.08	4.50	0.00	6.00	0.42	4.50	0.75	
03/15/20	22.50	22.50	0.25	2.00	0.50	4.50	4.50	0.00	6.00	0.00	5.25	0.88	
03/16/20	22.75	22.50	0.08	2.00	0.50	4.50	5.00	0.00	6.25	0.50	5.17	0.83	
03/17/20	23.00	23.00	0.08	2.00	0.25	4.25	4.50	0.00	5.50	0.25	4.92	0.89	
03/18/20	22.50	22.50	0.08	2.00	0.16	4.50	4.50	0.00	6.00	0.00	5.78	0.96	
03/19/20	22.75	22.75	0.16	2.00	0.16	4.50	4.50	0.00	5.75	0.00	5.43	0.94	
03/20/20	22.00	22.50	0.08	2.00	0.22	4.25	4.50	0.00	6.50	0.25	5.95	0.92	
Means	**1.00**	**0.50**	**0.15**	**2.00**	**0.36**	**0.42**	**0.50**	**0.00**	**6:0**	**0.20**	**5.28**	**0.88**	
	1:0	0:30	0:9	2:0	0:22	0:25	0:30			0:12	5:17		

10:30 – 4:30 am

Regular meals

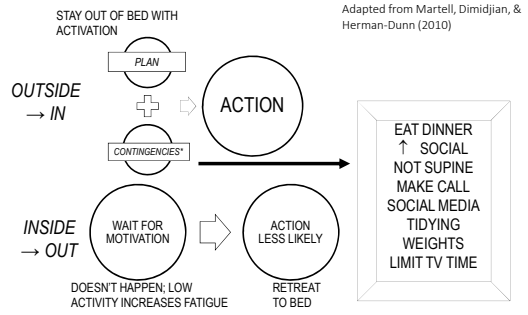
One social event

date	into bed (1)	sleep attempt	sol (3)	nwak (4)	waso (5)	woke (6a)	out of bed (7)	nap/rest (11b)	tib (calc)	term waso (calc)	tst	se (%)	
session 5													
04/14/20	22.25	22.25	0.33	2.00	0.50	4.50	4.75	0.00	6.50	0.25	5.42	0.83	
04/15/20	22.25	22.25	0.33	2.00	0.25	4.75	4.75	0.00	6.50	0.00	5.92	0.91	
04/16/20	22.25	22.25	0.25	2.00	0.25	4.75	4.75	0.00	6.50	0.00	6.00	0.92	
04/17/20	22.00	22.25	0.25	2.00	0.25	4.75	4.75	0.00	6.75	0.00	6.25	0.93	
04/18/20	22.50	22.50	0.33	2.00	0.16	4.75	4.75	0.00	6.25	0.00	5.76	0.92	
04/19/20	22.25	22.25	0.16	2.00	0.16	4.75	4.75	0.00	6.50	0.00	6.18	0.95	
04/20/20	22.25	22.50	0.33	2.00	0.25	4.50	4.75	0.00	6.50	0.25	5.67	0.87	
Means	**0.50**	**0.25**	**0.26**	**2.00**	**0.26**	**0.25**	**0.00**	**0.00**	**6:30**	**0.04**	**0.07**	**5.89**	**0.91**
	0:30	0:15	0:17	2:0	0:16	0:15	0:0			0:4	5:53		

Coordinate monthly family event

Walks

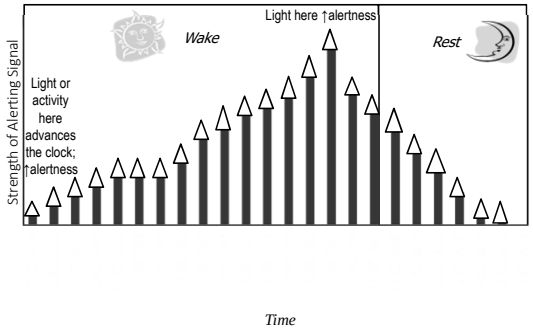
" I can't stay out of bed because I feel tired" – Outside-In



Sample Contingency plan*

- Written self-statements about outside in strategy for limiting time-in-bed
  - "No one who rises before dawn 360 days a year fails to make his family rich."
  - "A man grows most tired while standing still."
- Accountability: Scheduled a morning activity with a friend two days a week
- Morning light soon after, but not immediately upon awakening (slightly phase advanced)

Leveraging the circadian system



When it is ill-advised to get out of bed

- Physical illness or frailty may make it physically difficult to get out of bed or transition to another room
- Housing issues: might not be another room
- Sedating medication that make middle of the night ambulating dangerous
  - Consider Counter control (sitting up in bed); most effective for middle of night awakenings, not onset problems
- Some concerns for the client, but it turned out, he wanted full discontinuation of hypnotics rather than noncontingent use
  - Also emphasized the use of lights for safety

Davies, Lacks, Storandt, Bertelson (1986); Hoelscher & Edinger (1988)

Case Formulation Form: Other factors

Domains	Targets
7. Any other factors? Cultural considerations, sleep environment, care taking duties at night, life phase sleep issues; mental status, and readiness for change.	□ Sleep environment optimal? □ Care taking or on-call duties at night? □ Cognitive or learning issues? □ What stage of readiness for change? □ Any resistance to engaging in short-term behavior changes?

Case Formulation Form: Other factors

Domains	Tools?
7. Any other factors? Consider sleep environment, care taking duties at night, life phase sleep issues; mental status, and readiness for change.	• Troubleshoot environmental issues or suggest aides • Psychoeducation for on-call sleep • Adapt materials to comprehension level • Increase motivation for change (MI) or it may not be the right time to participate in this program. Consider medication or an acceptance based approach. – Fatigue may be the problem, in which case your fatigue-producing techniques are at odds with goals

Cultural considerations

- Napping is a life nourishment strategy, important to Traditional Chinese Medicine (TCM)
- Now what?
  - Humans have values and both desire and deserve (e.g., cosleeping, no schedules etc.) – not about right vs. wrong: inform and collaboratively discuss pro/con, temp/longterm
- "Adult children 'should' be helping out"

GRADE: Pharmacotherapy for insomnia

Sateia et al., 2017

The following medications are recommended (versus no treatment) in adults, but it is acknowledged that the evidence is WEAK*:

- Eszopiclone as a treatment for sleep onset and sleep maintenance insomnia.
- Zaleplon as a treatment for sleep onset insomnia. Zolpidem as a treatment for sleep onset and sleep maintenance insomnia.
- Triazolam as a treatment for sleep onset insomnia.
- Temazepam as a treatment for sleep onset and sleep maintenance insomnia.
- Doxepin as a treatment for sleep maintenance insomnia.

"We suggest that clinicians NOT use the following medications as a treatment for sleep onset or sleep maintenance insomnia (versus no treatment) in adults:

- trazodone
- tiagabine
- diphenhydramine
- melatonin
- tryptophan
- Valerian"

A WEAK* recommendation reflects a lower degree of certainty in the outcome

Questions

Insomnia Severity Index (Morin, 1993)

1. Please rate the current severity of your insomnia problem(s):

	None	Mild	Mod.	Severe	Very Severe
Difficulty falling asleep	0	1	2	3	4
Difficulty staying asleep	0	1	2	3	4
Problem waking up too early	0	1	2	3	4

2. How satisfied/dissatisfied are you with your current sleep pattern?

Very Satisfied		Moderately Satisfied		Very Dissatisfied
0	1	2	3	4

3. To what extent do you consider your sleep problem to INTERFERE with your daily functioning (e.g., daytime functioning, ability to function at work/daily chores, concentration, memory, mood, etc.)?

Not at All	A little	Somewhat	Much	Very much
0	1	2	3	4

4. How NOTICEABLE to others do you think your sleeping problem is in terms of impairing the quality of your life?

Not at All	A little	Somewhat	Much	Very much
0	1	2	3	4

5. How WORRIED/distressed are you about your current sleep problem?

Not at All	A little	Somewhat	Much	Very much
0	1	2	3	4

After a poor night's sleep, which of the following problems do you experience the next day? Circle all those that apply.

a. Daytime fatigue: tired, exhausted, washed out, sleepy.
b. Difficulty functioning: performance impairment at work/daily chores, difficulty concentrating, memory problems.
c. Mood problems: irritable, tense, nervous, groggy, depressed, anxious, grouchy, hostile, angry, confused.
d. Physical symptoms: muscle aches/pain, light-headed, headache, nausea, heartburn, muscle tension.

Action Plan for Addressing Insomnia

Insomnia can return but now that you know how to address it, you need not worry about whether it returns. What parts of this program seemed to work well for you? Please check all that apply

- ☐ Keeping the same wake-up time every day (no matter you much sleep you get)
- ☐ Going to bed when you are sleepy but never before your regular bedtime
- ☐ Getting out of bed when you are unable to sleep
- ☐ Creating a buffer zone before bed
- ☐ Getting out of bed if you find yourself worrying or you cannot shut off your thoughts
- ☐ Engage in worrying or problem-solving earlier in the evening
- ☐ Limiting the amount of time you spend in bed each night
- ☐ Using the bed for sleeping only
- ☐ No napping
- ☐ Try not to have caffeine or alcohol, smoke cigarettes or engage in exercise within a few hours of your bedtime

Are you currently doing all of the checked recommendations? If yes, and you continue to have problems, please call your therapist and schedule a refresher session.

If you notice new sleep-related problems, please contact your doctor and schedule an appointment. Such problems can include:

- — loud snoring
- — stopping breathing, breathing pauses, gasping or snorting during sleep
- — falling asleep unintentionally/dozing during the day
- — a creepy-crawly sensation in your lower legs in the evening along with an irresistible urge to move your legs to get rid the sensation
- — very frequent leg jerking during the night
- — any other unusual new sleep experiences

Remember, you mastered the insomnia before, and you'll master it again

Sleep Diary Instructions

General Instructions

What is a Sleep Diary? A sleep diary is designed to gather information about your daily sleep pattern.

How often and when do I fill out the sleep diary? It is necessary for you to complete your sleep diary every day. If possible, the sleep diary should be completed within one hour of getting out of bed in the morning.

What should I do if I miss a day? If you forget to fill in the diary or are unable to finish it, leave the diary blank for that day.

What if something unusual affects my sleep or how I feel in the daytime? If your sleep or daytime functioning is affected by some unusual event (such as an illness, or an emergency) you may make brief notes on your diary.

What do the words "bed" and "day" mean on the diary? This diary can be used for people who are awake or asleep at unusual times. In the sleep diary, the word "day" is the time when you choose or are required to be awake. The term "bed" means the place where you usually sleep.

Will answering these questions about my sleep keep me awake? This is not usually a problem. You should not worry about giving exact times, and you should not watch the clock. Just give your best estimate.

Item Instructions

Use the guide below to clarify what is being asked for each item of the Sleep Diary.

Date: Write the date of the morning you are filling out the diary.

1. What time did you get into bed? Write the time that you got into bed. This may not be the time that you began "trying" to fall asleep.

2. What time did you try to go to sleep? Record the time that you began "trying" to fall asleep.

3. How long did it take you to fall asleep? Beginning at the time you wrote in question 2, how long did it take you to fall asleep.

4. How many times did you wake up, not counting your final awakening? How many times did you wake up between the time you first fell asleep and your final awakening?

5. In total, how long did these awakenings last? What was the total time you were awake between the time you first fell asleep and your final awakening. For example, if you woke 3 times for 20 minutes, 35 minutes, and 15 minutes, add them all up (20+35+15= 70 min or 1 hr and 10 min).

6. What time was your final awakening? Record the last time you woke up in the morning.

7. What time did you get out of bed for the day? What time did you get out of bed with no further attempt at sleeping? This may be different from your final awakening time (e.g. you may have woken up at 6:35 a.m. but did not get out of bed to start your day until 8:20 a.m.)

8. How would you rate the quality of your sleep? "Sleep Quality" is your sense of whether your sleep was good or poor.

9. *Comments* If you have anything that you would like to say that is relevant to your sleep feel free to write it here.

Sample **Consensus Sleep Diary-Core** ID/Name:______________________________

Today's date	4/5/11							
1. What time did you get into bed?	10:15 p.m							
2. What time did you try to go to sleep?	11:30 p.m							
3. How long did it take you to fall asleep?	55 min.							
4. How many times did you wake up, not counting your final awakening?	3 times							
5. In total, how long did these awakenings last?	1 hour 10 min.							
6. What time was your final awakening?	6:35 a.m.							
7. What time did you get out of bed for the day?	7:20 a.m							
8. How would you rate the quality of your sleep?	☐ Very poor ☑ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good
9. Comments (if applicable)	I have a cold							

Case Conceptualization Form

Domains	Target	Resolution
1. Sleep Drive: Are there any factors weakening the sleep drive? N.B. Low sleep drive can interfere with sleep onset and continuity as well as sleep depth/quality.	□ Time-in-bed is 30 minutes greater than average total sleep time? □ Any evidence of dozing? □ Any evidence of napping? □ Any substances that block sleep drive (e.g., caffeine)? □ Evidence of decreased physical activity in a 24-hour period? □ Lingering in bed greater than 30 minutes post-wake in the morning?	
2. Biological clock: Are there factors weakening the signal from the biological clock? N.B. Without regular habits congruent with one's chronotype, there will be weak alerting signals (e.g., fatigue) and social jetlag (e.g., sleep and mood problems).	□ An hour or more variability in rise time □ An hour or more variability in rise time □ Are they a night owl keeping an early bird's schedule, or reverse?	
3. Arousal: Any evidence of hyperarousal? Any behaviors engaged to "produce sleep" (i.e., sleep effort)? N.B. Sleep effort is related to and perpetuates anxiety—a state incongruous with sleep. Additionally, pairing wakefulness or negative activities with the bed will produce conditioned arousal.	□ Are there rituals to produce sleep even though sleep continues to be bad, e.g., no alarm clock, sleeping separate from bed partner, knockout shades, white noise machine/masks, tv or reading in bed…? □ Are they worried about sleep? □ Are they worried about other things (in bed)? □ Are they wide awake upon getting into bed? □ Do they stay in bed when awake? □ Do they feel frustrated/anxious/distressed while awake in bed?	

1. Unhealthy sleep behaviors: What unhealthy sleep behaviors are present? Consider amount and timing, etc.).	□ Excessive or late caffeine? □ Alcohol? □ Marijuana? □ Short-acting sleeping pills? □ Nocturnal eating? □ Vigorous evening exercise?	
2. Medications: What medications might impact the patient's sleep/sleepiness? Consider carryover effects, tolerance, and psychological dependence.		
3. Comorbidities: What comorbidities impact the patient's sleep and how? Consider sleep, medical and psychiatric conditions. (e.g., difficult adjustment to CPAP treatment for sleep apnea, pain, PTSD-related hypervigilance).	□ Sleep apnea, if yes, is it adequately treated? □ Restless Leg Syndrome, if yes, is it adequately treated? □ Periodic Limb Movement, if yes, is it adequately treated? □ Chronic pain, if yes, is it adequately treated? □ Comorbid psychiatric disorder, if yes, is it adequately treated? Affects sleep? Others?	
4. Other: Consider sleep environment, care taking duties at night, life phase sleep issues; mental status, and readiness for change.	□ Sleep environment optimal? □ Care taking or on-call duties at night? □ Cognitive or learning issues? □ What stage of readiness for change? □ Any resistance to engaging in short-term behavior changes?	

Notes:

Sleep Diary Instructions (CSD-M)

General Instructions

What is a Sleep Diary? A sleep diary is designed to gather information about your daily sleep pattern.

How often and when do I fill out the sleep diary? It is necessary for you to complete your sleep diary every day. If possible, the sleep diary should be completed within one hour of getting out of bed in the morning.

What should I do if I miss a day? If you forget to fill in the diary or are unable to finish it, leave the diary blank for that day.

What if something unusual affects my sleep or how I feel in the daytime? If your sleep or daytime functioning is affected by some unusual event (such as an illness, or an emergency) you may make brief notes on your diary.

What do the words "bed" and "day" mean on the diary? This diary can be used for people who are awake or asleep at unusual times. In the sleep diary, the word "day" is the time when you choose or are required to be awake. The term "bed" means the place where you usually sleep.

Will answering these questions about my sleep keep me awake? This is not usually a problem. You should not worry about giving exact times, and you should not watch the clock. Just give your best estimate.

Sleep Diary Item Instructions

Use the guide below to clarify what is being asked for each item of the Sleep Diary.

Date.: Write the date of the morning you are filling out the diary.

1. What time did you get into bed? Write the time that you got into bed. This may not be the time you began "trying" to fall asleep.

2. What time did you try to go to sleep? Record the time that you began "trying" to fall asleep.

3. How long did it take you to fall asleep? Beginning at the time you wrote in question 2, how long did it take you to fall asleep.

4. How many times did you wake up, not counting your final awakening? How many times did you wake up between the time you first fell asleep and your final awakening?

5. In total, how long did these awakenings last? What was the total time you were awake between the time you first fell asleep and your final awakening. For example, if you woke 3 times for 20 minutes, 35 minutes, and 15 minutes, add them all up (20+35+15= 70 min or 1 hr and 10 min).

6a. What time was your final awakening? Record the last time you woke up in the morning.

6b. After your final awakening, how long did you spend in bed trying to sleep? After the last time you woke-up (Item #6a), how many minutes did you spend in bed trying to sleep? For example, if you woke up at 8 am but continued to try and sleep until 9 am, record 1 hour.

6c. Did you wake up earlier than you planned? If you woke up or were awakened earlier than you planned, check yes. If you woke up at your planned time, check no.

6d. If yes, how much earlier? If you answered "yes" to question 6c, write the number of minutes you woke up earlier than you had planned on waking up. For example, if you woke up 15 minutes before

the alarm went off, record 15 minutes here.

7. What time did you get out of bed for the day? What time did you get out of bed with no further attempt at sleeping? This may be different from your final awakening time (e.g. you may have woken up at 6:35 a.m. but did not get out of bed to start your day until 7:20 a.m.)

8. In total, how long did you sleep? This should just be your best estimate, based on when you went to bed and woke up, how long it took you to fall asleep, and how long you were awake. You do not need to calculate this by adding and subtracting; just give your best estimate.

9. How would you rate the quality of your sleep? "Sleep Quality" is your sense of whether your sleep was good or poor.

10. How restful or refreshed did you feel when you woke up for the day? This refers to how you felt after you were done sleeping for the night, during the first few minutes that you were awake.

11a. How many times did you nap or doze? A nap is a time you decided to sleep during the day, whether in bed or not in bed. "Dozing" is a time you may have nodded off for a few minutes, without meaning to, such as while watching TV. Count all the times you napped or dozed at any time from when you first got out of bed in the morning until you got into bed again at night.

11b. In total, how long did you nap or doze? Estimate the total amount of time you spent napping or dozing, in hours and minutes. For instance, if you napped twice, once for 30 minutes and once for 60 minutes, and dozed for 10 minutes, you would answer "1 hour 40 minutes." If you did not nap or doze, write "N/A" (not applicable).

12a. How many drinks containing alcohol did you have? Enter the number of alcoholic drinks you had where 1 drink is defined as one 12 oz beer (can), 5 oz wine, or 1.5 oz liquor (one shot).

12b. What time was your last drink? If you had an alcoholic drink yesterday, enter the time of day in hours and minutes of your last drink. If you did not have a drink, write "N/A" (not applicable).

13a. How many caffeinated drinks (coffee, tea, soda, energy drinks) did you have? Enter the number of caffeinated drinks (coffee, tea, soda, energy drinks) you had where for coffee and tea, one drink = 6-8 oz; while for caffeinated soda one drink = 12 oz.

13b. What time was your last caffeinated drink? If you had a caffeinated drink, enter the time of day in hours and minutes of your last drink. If you did not have a caffeinated drink, write "N/A" (not applicable).

14. Did you take any over-the-counter or prescription medication(s) to help you sleep? If so, list medication(s), dose, and time taken: List the medication name, how much and when you took EACH different medication you took tonight to help you sleep. Include medication available over the counter, prescription medications, and herbals (example: "Sleepwell 50 mg 11 pm"). If every night is the same, write "same" after the first day

15. *Comments*: If you have anything that you would like to say that is relevant to your sleep feel free to write it here.

Sample **Consensus Sleep Diary-M (Please Complete Upon Awakening)** **ID/NAME: ___________________**

Today's Date	4/5/11							
1. What time did you get into bed?	10:15 p.m.							
2. What time did you try to go to sleep?	11:30 p.m.							
3. How long did it take you to fall asleep?	55 min.							
4. How many times did you wake up, not counting your final awakening?	6 times							
5. In total, how long did these awakenings last?	2 hours 5 min.							
6a. What time was your final awakening?	6:35 a.m.							
6b. After your final awakening, how long did you spend in bed trying to sleep?	45 min.							
6c. Did you wake up earlier than you planned?	☑ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
6d. If yes, how much earlier?	1 hour							
7. What time did you get out of bed for the day?	7:20 a.m.							
8. In total, how long did you sleep?	4 hours 10 min.							
9. How would you rate the quality of your sleep?	☐ Very poor ☑ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good	☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good
10. How rested or refreshed did you feel when you woke-up for the day?	☐ Not at all rested ☑ Slightly rested ☐ Somewhat rested ☐ Well-rested ☐ Very well-rested	☐ Not at all rested ☐ Slightly rested ☐ Somewhat rested ☐ Well-rested ☐ Very well-rested	☐ Not at all rested ☐ Slightly rested ☐ Somewhat rested ☐ Well-rested ☐ Very well-rested	☐ Not at all rested ☐ Slightly rested ☐ Somewhat rested ☐ Well-rested ☐ Very well-rested	☐ Not at all rested ☐ Slightly rested ☐ Somewhat rested ☐ Well-rested ☐ Very well-rested	☐ Not at all rested ☐ Slightly rested ☐ Somewhat rested ☐ Well-rested ☐ Very well-rested	☐ Not at all rested ☐ Slightly rested ☐ Somewhat rested ☐ Well-rested ☐ Very well-rested	☐ Not at all rested ☐ Slightly rested ☐ Somewhat rested ☐ Well-rested ☐ Very well-rested

Consensus Sleep Diary-M Continued

ID/NAME: _____

	Sample							
Today's Date	4/5/11							
11a. How many times did you nap or doze? 11b. In total, how long did you nap or doze?	2 times 1 hour 10 min.							
12a. How many drinks containing alcohol did you have? 12b. What time was your last drink?	3 drinks 9 :20 p.m.							
13a. How many caffeinated drinks (coffee, tea, soda, energy drinks) did you have? 13b. What time was your last drink?	2 drinks 3 :00 p.m.							
14. Did you take any over-the-counter or prescription medication(s) to help you sleep? If so, list medication(s), dose, and time taken	☑ Yes □ No Medication(s): Relaxo-Herb Dose: 50 mg Time(s) taken: 11 pm	□Yes □No Medication(s): Dose: Time(s) taken:	□Yes □No Medication(s): Dose: Time(s) taken:	□Yes □No Medication(s): Dose: Time(s) taken:	□Yes □No Medication(s): Dose: Time(s) taken:	□Yes □No Medication(s): Dose: Time(s) taken:	□Yes □No Medication(s): Dose: Time(s) taken:	□Yes □No Medication(s): Dose: Time(s) taken:
15. Comments (if applicable)	I have a cold							

Changing your Thinking About Sleep

Situation	Mood	Thoughts	Evidence that the thought is true	Evidence that the thought is not true	Alternative thought	Rate mood now
What was the situation in which you were started thinking about sleep?	Describe mood in one word and rate the intensity (0-100%)	What were you thinking about? Circle the thought that bothers you the most.	Write why you think the circled thought is true, but stick to factual evidence only.	Write down why the circled thought might not be true.	Considering the evidence for and against the thought, write an alternative, more helpful thought.	What is your mood now and how intense is the mood?

Things that may get in the way of following the rules

How likely is it that you will follow each of these rules?

Rules	Not at all likely	Slight chance	Fairly likely	Very likely
	0	1	2	3
Leave the room when you can't sleep	0	1	2	3
Avoid doing things you do when awake in the bedroom	0	1	2	3
Avoid *trying* to sleep	0	1	2	3
Keep the same rise time every day	0	1	2	3
Match the your time in bed each night to match how much sleep you are currently getting	0	1	2	3

For those rated 0 or 1, what do you think might get in the way of following these rules and is there anything you can do to help solve these problems?

Rule	Possible problems	Possible solutions
Example: Avoid doing things you do when you are awake in bed	My wife likes to watch television in bed and will get mad if I suggest we turn it off.	I can watch TV in the living room My wife would like me to sleep better, if I explain why, she might understand
1.		
2.		
3.		
4.		
5.		

Enjoying your Morning

Are you having trouble getting out of bed in the morning?

What do you see as the problem?

- Don't want to face the day?
- Too comfortable in the bed?
- Hate mornings?
- Not a morning person?
- Believe you have nothing to look forward to?
- Do you think that you may be able to fall back to sleep again?

Finding ways to get out of bed at the same scheduled time each morning will help your sleep improve. The best way to help do this, is to think of ways that would help you to get up. Below is a list of things others' have found helpful. We hope that this list inspires you to come up with your own way of getting out of the bed.

Ways to help to get out of bed

1. Go right into the shower to increase alertness
2. Make yourself a special breakfast
3. Treat yourself by buying/brewing your favorite coffee
4. Go out for breakfast—think about making it weekly
5. Take your dog for a walk, or if you don't have a dog—go by yourself. Fresh air will make you feel less sleep and being out in the sun is good for your body clock. (Also, your dog will thank you!)
6. Schedule a visit with a friend
7. If you are too comfortable to get up, wrap the blanket from your bed around you, and walk to your favorite chair in the house. Moving from a warm, comfortable bed to a comfortable chair will make it easier.
8. Remind yourself that if you will get any more sleep, it will be light, lower quality sleep at best because for most of us the extra sleep in the morning tends to be light.
9. _____
   _____
10. _____
    _____

Other Reasons for Feeling Tired

There are many reasons for feeling tired during the day, but sometimes we focus too much on poor sleep as the reason for why we are feeling this way. Focusing on sleep as the only cause of when you feel badly during the day puts more pressure on you to sleep. Feeling pressured to sleep makes falling asleep harder. Look at the other reasons why we feel tired during the day and rate how likely some of the reasons below are causing for *some* of your tiredness.

Likelihood 0-100%	**Reasons for Feeling Tired**
	Taking medications with tiredness/drowsiness as a side effect
	Boredom
	Not drinking enough water (i.e., dehydration)
	Caffeine “crash”
	Spending too much time in bed
	Bad mood (grouchy, irritable, tense)
	Diet (are you eating foods that make you feel drowsy or tired?)
	Stress
	Depression
	Pain
	Anxiety
	Doing “too little” physical activity during the day
	Doing “too much” physical activity during the day
	Being “out of shape” or overweight
	Eyes are tired (e.g., staring at a computer screen or television for a long time)
	Constipation
	Low blood iron levels (i.e., anemia)
	Candida
	Infections
	Medical conditions such as hypothyroidism
	Post-lunch dip in body temperature
	Others:

Staying Awake Until Your Scheduled Bedtime

Ideas for staying awake	Rate the likelihood of that this idea will keep you awake until your scheduled bedtime (Low, medium or high?)	Rate the likelihood of this idea interfering with your sleep (Low, medium or high?)
Example *Ask my wife to wake me if she sees me fall asleep*	*High*	*Low*

Things to do if you are awake

In the evening:

- Choose clothes that you can wear for work or school the next day
- Make your lunch
- Marinate or start to prepare food for dinner the following day and store it in the refrigerator
- Take a bath or long shower
- Write thank you notes or short emails to friends
- Surf the internet (non-stressful topics only), do research for major purchases (cars, appliances, vacations)
- Watch movies or episodes of television shows that you haven't seen in a long time (no action films)
- Take the dog for a long walk
- Groom your pets
- Listen to slow, relaxing or instrumental music
- Gather old bills and statements and shred them
- Organize collections- photos, old letters, wine, books, or other items
- Catch up on laundry or folding clothes
- Polish your shoes
- Iron or mend clothing
- Write in your journal
- Do some stretches to relax your muscles
- Give yourself a pedicure, manicure or facial
- Sweep or mop the kitchen floor while no one else is there to walk on it
- Floss!
- Knit
- Quilt

- **During the night:**
- Look through catalogs
- Sort out junk mail and bills (but don't pay bills)
- Play solitaire with cards
- Catch up on your reading
- Call friends who live in other time zones
- Clean out the refrigerator
- Make a grocery shopping list for the week
- Create a detailed menu for suppers
- De-clutter your coffee table, dining room table, kitchen countertops or desk
- Create a list of activities that you'd enjoy doing on weekends and vacations
- Work on photo albums or scrapbooks

- Fold clothes, put away clothes
- Read magazines or other light material
- Make a materials list for a project around the house
- Choose one or two drawers to clean out (in your desk, kitchen, bathroom)
- Watch infomercials, C-SPAN, The Weather Channel, or other repetitive television shows
- Organize collections of CDs or DVDs and choose some to donate or sell if you no longer enjoy them
- Jot down thoughts on a notepad for an assigned period of time, if you are using this exercise to help decrease nighttime and bedtime thinking and worrying
- Knit or do other crafts that you can stop working on when you feel sleepy
- Read your kids' books- these are often very comforting and positive in their messages

Early in the morning:

- Meditate or pray
- Watch the sunrise
- Take the dog for a walk
- Read the newspaper or read the news online
- Go to your gym or workout at home
- Go to the grocery store or other stores that open early
- Make lunch for yourself and for everyone else in the house
- Enjoy being able to get ready for work and kids ready for school without having to rush
- Sort out some kids' toys and choose things for Goodwill or a yard sale
- Sort and start your laundry, iron shirts or other clothes for work
- Start a budget for your family on a spreadsheet or in a notebook
- Send emails to friends or check your work email
- Shred or erase old computer disks, DVDs, etc., and dump old data from folders on your computer
- Organize all of your bills, receipts, coupons and warranty information in a filing cabinet or folders
- Get some of the preparation started for dinner dishes (marinating, chopping vegetables, and so on)
- Make the bed and tidy up your bedroom
- Open the curtains and blinds in the house
- Sweep your sidewalk or steps, or shovel snow
- Do some light gardening or water houseplants or those around your porch
- Review your to-do list for the day or the week

Selected Readings and Resources

Selected Author Books

Carney, C. E. (2020). Goodnight Mind for Teens: Skills to Help You Quiet Noisy Thoughts and Get the Sleep You Need. New Harbinger Press: Oakland, CA.

Edinger, J.D. & Carney, C.E. (2015). Overcoming Insomnia: A Cognitive Behavioral Insomnia Approach, Therapist Guide. Part of the "Treatments that Work" series; Oxford University Press, NY;

Manber, R. & Carney, C.E. (2015). Treatment Plans and Interventions: Insomnia. A Case Formulation Approach; Part of the "Treatment Planner" Series (Robert L; Leahy, Ed;); The Guilford Press, Berkeley, CA.

Carney, C.E., & Manber, R. (2008). Quiet Your Mind and Get to Sleep: Solutions to Insomnia for those with Depression, Anxiety and Chronic Pain. New Harbinger Press: Oakland, CA.

Carney, C. E., & Posner, D. (2015). Cognitive Behavior Therapy for Insomnia in Those with Depression: A Guide for Clinicians. Routledge.

Carney, C. E., & Edinger, J. D. (2010). Insomnia and Anxiety. Springer Science & Business Media.

Links to selected assessment tools

1. STOPBANG to assess for possible apnea (refer those with scores of 3 or above)
http://www.thoracic.org/assemblies/srn/questionaires/stop-bang.php

2. Epworth Sleepiness Scale to assess for excessive sleepiness (refer those with scores of 10 or above).
http://epworthsleepinessscale.com/1997-version-ess/

3. Please feel free to use our free app, developed for our training in the US VA system:

https://itunes.apple.com/ca/app/cbt-i-coach/id655918660?mt=8

https://play.google.com/store/apps/details?id=com.t2.cbti&hl=en

Author Resources for Teen and Young Adult Sleep

1. Free app for self-help cognitive behavioural sleep treatment (age 14-25 years old) www.dozeapp.ca
2. Self-help book for teens (and companion to doze):

Carney, C. E. (2020). Goodnight Mind for Teens: Skills to Help You Quiet Noisy Thoughts and Get the Sleep You Need. New Harbinger Press: Oakland, CA.

Bibliography for workshop and beyond

Asplund, R., & Lindblad, B. E. (2004). Sleep and sleepiness 1 and 9 months after cataract surgery. *Archives of gerontology and geriatrics*, *38*(1), 69-75.

Baglioni, C., Battagliese, G., Feige, B., Spiegelhalder, K., Nissen, C., Voderholzer, U., ... & Riemann, D. (2011). Insomnia as a predictor of depression: a meta-analytic evaluation of longitudinal epidemiological studies. Journal of affective disorders, 135(1-3), 10-19.

Baron, K. G., Abbott, S., Jao, N., Manalo, N., & Mullen, R. (2017). Orthosomnia: Are Some Patients Taking the Quantified Self Too Far? Journal of clinical sleep medicine: JCSM: official publication of the American Academy of Sleep Medicine, 13, 2, 351.

Beck, A. T. (1999). Psychoevolutionary view of personality and axis I disorders. In R. C. Cloninger (Ed.), Personality and Psychopathology (pp. 721-730). Washington: American Psychiatric Press.

Bernert, R. A., Joiner Jr, T. E., Cukrowicz, K. C., Schmidt, N. B., & Krakow, B. (2005). Suicidality and sleep disturbances. Sleep, 28(9), 1135-1141.

Bonnet, M. H., & Arand, D. L. (1992). Caffeine use as a model of acute and chronic insomnia. Sleep 15, 526-536.

Bonnet, M. H., & Arand, D. L. (1995). 24-hour metabolic rate in insomniacs and matched normal sleepers. Sleep, 18, 581-588.

Bonnet, M. H., & Arand, D. L. (1996). Insomnia-nocturnal sleep disruption-daytime fatigue: the consequences of a week of insomnia. Sleep, 19, 453-461.

Bonnet, M. H., & Arand, D. L. (1998). The consequences of a week of insomnia II: patients with insomnia. Sleep, 21, 359-368.

Bonnet, M. H., & Arand, D. L. (2005). Impact of motivation on multiple sleep latency test and maintenance of wakefulness test measurements. *Journal of clinical sleep medicine*, *1*(04), 386-390.

Bootzin, R. R. (1972). Stimulus control treatment for insomnia. Proceedings of the 80th Annual Meeting of the American Psychological Association, 7, 395-396.

Bolla, K. I., Lesage, S. R., Gamaldo, C. E., Neubauer, D. N., Wang, N. Y., Funderburk, F. R., ... & Cadet, J. L. (2010). Polysomnogram changes in marijuana users who report sleep disturbances during prior abstinence. *Sleep medicine*, *11*(9), 882-889.

Borbély, A. A. (1982). A two process model of sleep regulation. *Human neurobiology*.

Borbély, A. A., Daan, S., Wirz-Justice, A., & Deboer, T. (2016). The two-process model of sleep regulation: a reappraisal. Journal of sleep research, 25(2), 131-143.

Broomfield, N. M., & Espie, C. A. (2003). Initial insomnia and paradoxical intention: An experimental investigation of putative mechanisms using subjective and actigraphic measurement of sleep. Behavioural and Cognitive Psychotherapy, 31(03), 313-324.

Buysse, D. J., Ancoli-Israel, S., Edinger J D, Lichstein, K. L., & Morin, C. M. (2006). Recommendations for a standard research assessment of insomnia. Sleep, 29(9), 1155-1173.

Buysse, D. J., Germain, A., Moul, D. E., Franzen, P. L., Brar, L. K., Fletcher, M. E., ... & Monk, T. H. (2011). Efficacy of brief behavioral treatment for chronic insomnia in older adults. Archives of internal medicine, 171(10), 887-895.

Buysse, D. J., Germain, A., Moul, D. E., Franzen, P. L., Brar, L. K., Fletcher, M. E., ... & Monk, T. H. (2011). Efficacy of brief behavioral treatment for chronic insomnia in older adults. Archives of internal medicine, 171(10), 887-895.

Cajochen, C., Frey, S., Anders, D., Späti, J., Bues, M., Pross, A., ... & Stefani, O. (2011). Evening exposure to a light-emitting diodes (LED)-backlit computer screen affects circadian physiology and cognitive performance. Journal of Applied Physiology, 110(5), 1432-1438.

Carlson, L. E., & Garland, S. N. (2005). Impact of mindfulness-based stress reduction (MBSR) on sleep, mood, stress and fatigue symptoms in cancer outpatients. *International journal of behavioral medicine*, *12*(4), 278-285.

Carney, C.E. (Unpublished manual). Behavioural Activation and Behavioral Insomnia Therapy (BABIT).

Carney, C. E., Buysse, D.J., Ancoli-Israel, S., Edinger, J.D., Krystal, A. D., Lichstein, K.L., & Morin, C.M. (2012). The Consensus Sleep Diary: Standardizing prospective sleep self-monitoring. Sleep, 35, 2, 287-302.

Carney, C. E., & Edinger, J. D. (2006). Identifying critical dysfunctional beliefs about sleep in primary insomnia. Sleep, 29(4), 440-453.

Carney, C. E., Edinger, J. D., Morin, C. M., Manber, R., Rybarcyk, B., Stepanski, E., . . . Wright, H. (2010). Examining maladaptive beliefs about sleep across insomnia patient groups. Journal of Psychosomatic Research, 68(1), 57-65.

Carney, C. E., Edinger, J. D., Kuchibhatla, M., Lachowski, A. M., Bogouslavsky, O., Krystal, A. D., & Shapiro, C. M. (2017). Cognitive Behavioral Insomnia Therapy for those with Insomnia and Depression: A Randomized Controlled Clinical Trial. Sleep.

Colvonen, P. J., Masino, T., Drummond, S. P., Myers, U. S., Angkaw, A. C., & Norman, S. B. (2015). Obstructive Sleep Apnea and Posttraumatic Stress Disorder among OEF/OIF/OND Veterans. Journal of clinical sleep medicine: JCSM: official publication of the American Academy of Sleep Medicine, 11(5), 513-518.

Chambers, M. J. (1994). Actigraphy and insomnia: A closer look: I. Sleep: Journal of Sleep Research & Sleep Medicine.

Chang, A. M., Aeschbach, D., Duffy, J. F., & Czeisler, C. A. (2015). Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness. Proceedings of the National Academy of Sciences, 112(4), 1232-1237.

Chaudhuri, A., & Behan, P. O. (2004). Fatigue in neurological disorders. *The Lancet*, *363*(9413), 978-988.

Chung, F., Yegneswaran, B., Liao, P., Chung, S. A., Vairavanathan, S., Islam, S., ... & Shapiro, C. M. (2008). STOP QuestionnaireA Tool to Screen Patients for Obstructive Sleep Apnea. *The Journal of the American Society of Anesthesiologists*, *108*(5), 812-821.

Coates, T. J., Killen, J. D., George, J., Marchini, E., Silverman, S., & Thoresen, C. (1982). Estimating sleep parameters: a multitrait-multimethod analysis. Journal of Consulting and Clinical Psychology, 50(3), 345.

Conroy, D. A., Kurth, M. E., Strong, D. R., Brower, K. J., & Stein, M. D. (2016). Marijuana use patterns and sleep among community-based young adults. Journal of addictive diseases, 35(2), 135143.Chambers, M. J. (1994). Actigraphy and insomnia: A closer look: I. Sleep: Journal of Sleep Research & Sleep Medicine.

Craske, M. G., Lang, A. J., Aikins, D., & Mystkowski, J. L. (2005). Cognitive behavioral therapy for nocturnal panic. *Behavior Therapy*, *36*(1), 43-54.

Czeisler, C. A., Duffy, J. F., Shanahan, T. L., Brown, E. N., Mitchell, J. F., Rimmer, D. W., ... & Dijk, D. J. (1999). Stability, precision, and near-24-hour period of the human circadian pacemaker. Science, 284(5423), 2177-2181.

Davies, R., Lacks, P., Storandt, M., & Bertelson, A. D. (1986). Countercontrol treatment of sleep-maintenance insomnia in relation to age. *Psychology and Aging*, *1*(3), 233.

Davis, J. L., & Wright, D. C. (2006). Exposure, relaxation, and rescripting treatment for trauma-related nightmares. Journal of trauma & dissociation, 7(1), 5-18.

Dugas, M. J., & Robichaud, M. (2012). *Cognitive-behavioral treatment for generalized anxiety disorder: From science to practice*. Routledge.

Edinger, J. D., Bonnet, M., Bootzin, R. R., Doghramji, K., Dorsey, C. M., Espie, C. A., . . . Stepanski, E. J. (2004). Derivation of research diagnostic criteria for insomnia: Report on an American Academy of Sleep Medicine work group. Sleep, 27, 1567-1596.

Edinger, J.D., Olsen, M.K., Stechuchak, K.M., Means, M.K., Lineberger, M.K., Kirby, A., Carney, C.E. (2009). Cognitive Behavioral Therapy with Primary and Comorbid Insomnia: A randomized clinical trial. Sleep. 32(4):499-510.

Edinger, J.D. & Carney, C.E. (2015). Overcoming Insomnia: A Cognitive Behavioral Insomnia Approach, Therapist Guide; Part of the “Treatments that Work” series; Oxford University Press, NY;

Edinger, J. D., Hoelscher, T. J., & Marsh, G. R., et al. (1992). A cognitive-behavioral therapy for sleep-maintenance insomnia in older adults. Psychology and Aging, 7(282-289).

Edinger, J. D., Olsen, M. K., Stechuchak, K. M., Means, M. K., Lineberger, M. D., Kirby, A., & Carney, C. E. (2009). Cognitive behavioral therapy for patients with primary insomnia or insomnia associated predominantly with mixed psychiatric disorders: a randomized clinical trial. Sleep, 32(4).

Edinger, J. D., & Sampson, W. S. (2003). A primary care "friendly" cognitive behavioral insomnia therapy. Sleep, 26, 177-182.

Edinger, J. D., Wohlgemuth, W. K., Krystal, A. D., & Rice, J. R. (2005). Behavioral insomnia therapy for fibromyalgia patients: a randomized clinical trial. Archives of internal medicine, 165(21), 25272535.

Edinger, J. D., Wohlgemuth, W. K., Radtke, R. A., Marsh, G. R., & Quillian, R. E. (2001). Cognitive behavioral therapy for treatment of chronic Primary Insomnia: A randomized controlled trial. JAMA, 285, 1856-1864.

Edinger, J. D., Wyatt, J. K., Stepanski, E. J., Olsen, M. K., Stechuchak, K. M., Carney, C. E., . . . Krystal, A. D. (2011). Testing the Reliability and Validity of DSM-IV-TR and ICSD-2 Insomnia Diagnoses: Results of a Multitrait-Multimethod Analysis. Archives of General Psychiatry, 68, 992-1002.

Espie, C. A., Broomfield, N. M., MacMahon, K. M., Macphee, L. M., & Taylor, L. M. (2006). The attention–intention–effort pathway in the development of psychophysiologic insomnia: a theoretical review. *Sleep Medicine Reviews*, *10*(4), 215-245.

Figueiro, M. G., Wood, B., Plitnick, B., & Rea, M. S. (2011). The impact of light from computer monitors on the melatonin levels in college students. Biog Amines, 25, 106-116.

Freemon, F. R. (1982). The effect of chronically administered delta-9-tetrahydrocannabinol upon the polygraphically monitored sleep of normal volunteers. Drug and Alcohol Dependence, 10(4), 345-353.

Germain, A., Shear, M. K., Hall, M., & Buysse, D. J. (2007). Effects of a brief behavioral treatment for PTSD-related sleep disturbances: a pilot study. *Behaviour research and therapy*, *45*(3), 627-632.

Germain, A., Richardson, R., Moul, D. E., Mammen, O., Haas, G., Forman, S. D., ... & Nofzinger, E. A. (2012). Placebo-controlled comparison of prazosin and cognitive-behavioral treatments for sleep disturbances in US Military Veterans. *Journal of psychosomatic research*, *72*(2), 89-96.

Germain, A., Richardson, R., Stocker, R., Mammen, O., Hall, M., Bramoweth, A. D., ... & Buysse, D. J. (2014). Treatment for insomnia in combat-exposed OEF/OIF/OND military veterans: Preliminary randomized controlled trial. *Behaviour research and therapy*, *61*, 78-88.

Guillon, M., Dumbleton, K., Theodoratos, P., Gobbe, M., Wooley, C. B., & Moody, K. (2016). The Effects of Age, Refractive Status, and Luminance on Pupil Size. Optometry and Vision Science, 93(9), 1093.

Hartmann, J., Carney, C. E., Lachowski, A.M., & Edinger, J.D. (2015). Exploring the construct of subjective sleep quality in those with insomnia. The Journal of Clinical Psychiatry, 76, 6, 768-773.

Harvey, A. G. (2002). A cognitive model of insomnia. Behaviour Research & Therapy, 40, 869-893.

Harvey, A. G., & Farrell, C. (2003). The efficacy of a Pennebaker-like writing intervention for poor sleepers. Behavioral Sleep Medicine, 1(2), 115-124.

Hauri, P. (1977). Current concepts: The sleep disorders. Upjohn, Kalamazoo.

Herljevic, M., Middleton, B., Thapan, K., & Skene, D. J. (2005). Light-induced melatonin suppression: age-related reduction in response to short wavelength light. *Experimental gerontology*, *40*(3), 237-242.

Hoelscher, T. J., & Edinger, J. D. (1988). Treatment of sleep-maintenance insomnia in older adults: Sleep period reduction, sleep education, and modified stimulus control. *Psychology and Aging*, *3*(3), 258.

Imbach, L. L., Büchele, F., Valko, P. O., Li, T., Maric, A., Stover, J. F., ... & Baumann, C. R. (2016). Sleep– wake disorders persist 18 months after traumatic brain injury but remain underrecognized. Neurology, 86(21), 1945-1949.

Jacobs, G. D., Pace-Schott, E. F., Stickgold, R., & Otto, M. W. (2004). Cognitive behavior therapy and pharmacotherapy for insomnia: a randomized controlled trial and direct comparison. Archives of internal medicine, 164(17), 1888-1896.

Johns, M. (1998). Rethinking the assessment of sleepiness. Sleep Medicine Reviews, 2(1), 3-15.

Jungquist, C. R, O'Brien, Matteson-Rusby, S., Smith, M. T., Pigeon, W. R., Xia, Y., ... & Perlis, M. L. (2010). The efficacy of cognitive-behavioral therapy for insomnia in patients with chronic pain. Sleep medicine, 11(3), 302-309.

Karlin, B. E., Trockel, M., Taylor, C. B., Gimeno, J., & Manber, R. (2013). National dissemination of cognitive behavioral therapy for insomnia in veterans: therapist-and patient-level outcomes. Journal of Consulting and Clinical Psychology, 81(5), 912.

Koffel, E., Kuhn, E., Petsoulis, N., Erbes, C. R., Anders, S., Hoffman, J. E., ... & Polusny, M. A. (2018). A randomized controlled pilot study of CBT-I Coach: feasibility, acceptability, and potential impact of a mobile phone application for patients in cognitive behavioral therapy for insomnia. Health informatics journal, 24(1), 3-13.

Kohn, L., & Espie, C. A. (2005). Sensitivity and specificity of measures of the insomnia experience: A comparative study of psychophysiologic insomnia, insomnia associated with mental disorder and good sleepers. Sleep, 29, 104-112.

Krakow, B., Hollifield, M., Johnston, L., Koss, M., Schrader, R., Warner, T. D., ... & Cheng, D. (2001). Imagery rehearsal therapy for chronic nightmares in sexual assault survivors with posttraumatic stress disorder: a randomized controlled trial. JAMA, 286(5), 537-545.

Krystal, A. D. (2009). A compendium of placebo-controlled trials of the risks/benefits of pharmacological treatments for insomnia: the empirical basis for US clinical practice. Sleep medicine reviews, 13(4), 265-274.

Kuhn, E., Weiss, B. J., Taylor, K. L., Hoffman, J. E., Ramsey, K. M., Manber, R., ... & Trockel, M. (2016). CBT-I coach: a description and clinician perceptions of a mobile app for cognitive behavioral therapy for insomnia. Journal of clinical sleep medicine, 12(04), 597-606.

Lack, L., Wright, H., & Paynter, D. (2007). The treatment of sleep onset insomnia with bright morning light. *Sleep and Biological Rhythms*, *5*(3), 173-179.

Lichstein, K. L., Riedel, B. W., Wilson, N. M., Lester, K. W., & Aguillard, R. N. (2001). Relaxation and sleep compression for late-life insomnia: A placebo-controlled trial. Journal of Consulting and Clinical Psychology, 69(2), 227-239.

Lichstein, K. L., Wilson, N. M., & Johnson, C. T. (2000). Psychological treatment of secondary insomnia. Psychology and aging, 15(2), 232.

Lineberger, M., Carney, C. E., Means, M. K., & Edinger, J. D. (2006). Defining insomnia: Quantitative criteria for insomnia severity and frequency. Sleep, 29(4), 479-485.

Littner, M., Hirshkowitz, M., Kramer, M., Kapen, S., Anderson, W. M., Bailey, D., . . . Woodson, T. (2003). Practice parameters for using polysomnography to evaluate insomnia: An update. Sleep: Journal of Sleep and Sleep Disorders Research, 26(6), 754-760.

Maich, K. H., Lachowski, A. M., & Carney, C. E. (2016). Psychometric Properties of the Consensus Sleep Diary in Those With Insomnia Disorder. Behavioral sleep medicine, 1-18.

Manber, R., Edinger, J. D., Gress, J. L., San Pedro-Salcedo, M. G., Kuo, T. F., & Kalista, T. (2008). Cognitive Behavioral Therapy for insomnia enhances depression outcome in patients with comorbid Major Depressive Disorder and insomnia. Sleep, 31(4), 489-495.

Manber R, Bootzin RR, Acebo C, Carskadon MA. The effects of regularizing sleep-wake schedules on daytime sleepiness. Sleep 1996;19:432-41.

Martell, C. R., & Dimidjian, S. Herman-Dunn, R;(2010); Behavioral Activation for Depression: Clinician's Guide.

Means, M. K., Edinger, J. D., Glenn, D. M., & Fins, A. I. (2003). Accuracy of sleep perceptions among insomnia sufferers and normal sleepers. Sleep medicine, 4(4), 285-296.

Montgomery-Downs, H. E., Insana, S. P., & Bond, J. A. (2012). Movement toward a novel activity monitoring device. Sleep and Breathing, 16(3), 913-917.

Morawetz, D. (2001). Depression and insomnia: Which comes first. *Aust J Counseling Psychology*, *3*, 19 24.

Morin, C. M., Bootzin, R. R., Buysse, D. J., Edinger, J. D., Espie, C. A., & Lichstein, K. L. (2006). Psychological and behavioral treatment of insomnia: Update of the recent evidence (19982004). Sleep, 29(11), 1398-1414.

Morin, C. M., Colecchi, C., Stone, J., Sood, R., & Brink, D. (1999). Behavioral and pharmacological therapies for late-life insomnia: A randomized controlled trial. JAMA, 281, 991-999.

Morin, C. M., Culbert, J. P., & Schwartz, S. M. (1994). Nonpharmacological interventions for insomnia: A meta-analysis of treatment efficacy. American Journal of Psychiatry, 151, 1172-1180.

Morin, C. M., Hauri, P. J., Espie, C. A., Spielman, A. J., Buysse, D. J., & Bootzin, R. R. (1999). Nonpharmacologic treatment of chronic insomnia. An American Academy of Sleep Medicine review. Sleep, 22, 1134-1156.

Morin, C. M., Kowatch, R. A., Barry, T., & Walton, E. (1993). Cognitive-behavior therapy for late-life insomnia. Journal of Consulting and Clinical Psychology, 61, 137-147.

Morin, C. M., Vallières, A., Guay, B., Ivers, H., Savard, J., Mérette, C., ... & Baillargeon, L. (2009). Cognitive behavioral therapy, singly and combined with medication, for persistent insomnia: a randomized controlled trial. Jama, 301(19), 2005-2015.

Murillo-Rodriguez, E., Blanco-Centurion, C., Sanchez, C., Piomelli, D., & Shiromani, P. J. (2003). Anandamide enhances extracellular levels of adenosine and induces sleep: an in vivo

microdialysis study. SLEEP-NEW YORK THEN WESTCHESTER-, 26(8), 943-947.
Murtagh, D. R., & Greenwood, K. M. (1995). Identifying effective psychological treatments for insomnia: A meta-analysis. Journal of Consulting and Clinical Psychology, 63, 79-89.
Nowell, P. D., Mazumdar, S., Buysse, D. J., Dew, M. A., Reynolds, C. F. I., & Kupfer, D. J. (1997). Benzodiazepines and zolpidem for chronic insomnia: a meta-analysis of treatment efficacy. Journal of the American Medical Association, 278, 2170-2177.
Ong, J. C., Shapiro, S. L., & Manber, R. (2009). Mindfulness meditation and cognitive behavioral therapy for insomnia: a naturalistic 12-month follow-up. Explore: The Journal of Science and Healing, 5(1), 30-36.
Qaseem, A., Kansagara, D., Forciea, M. A., Cooke, M., & Denberg, T. D. (2016). Management of chronic insomnia disorder in adults: A clinical practice guideline from the American College of Physicians. Annals of Internal Medicine, 165, 125–133. https://doi.org/10.7326/M15-2175
Randall, C., Nowakowski, S., & Ellis, J. G. (2018). Managing acute insomnia in prison: evaluation of a “one-shot” cognitive behavioral therapy for insomnia (CBT-I) intervention. Behavioral sleep medicine.
Raskind, M. A., Peskind, E. R., Kanter, E. D., Petrie, E. C., Radant, A., Thompson, C. E., ... & Thomas, R. G. (2003). Reduction of nightmares and other PTSD symptoms in combat veterans by prazosin: a placebo-controlled study. American Journal of Psychiatry, 160(2), 371-373.
Raskind, M. A., Peskind, E. R., Hoff, D. J., Hart, K. L., Holmes, H. A., Warren, D., ... & Rohde, K. (2007). A parallel group placebo controlled study of prazosin for trauma nightmares and sleep disturbance in combat veterans with post-traumatic stress disorder. Biological psychiatry, 61(8), 928-934.
Ree, M. J., & Harvey, A. G. (2004). Insomnia. In J. Bennett-Levy, G. Butler, M. Fennell, A. Hackman, M. Mueller & D. Westbrook (Eds.), Oxford guide to behavioral experiments in cognitive therapy (pp. 287-305). Oxford: Oxford University Press.
Riedel, B. W., Lichstein, K. L., & Dwyer, W. O. (1995). Sleep compression and sleep education for older insomniacs: self-help versus therapist guidance. Psychol Aging, 10, 54-63.
Riemann, D., Baglioni, C., Bassetti, C., Bjorvatn, B., Dolenc Groselj, L., Ellis, J. G., … Spiegelhalder, K. (2017). European guideline for the diagnosis and treatment of insomnia. Journal of Sleep Research, 26(6), 675–700. https://doi.org/10.1111/jsr.12594
Rybarczyk, B., Stepanski, E., Fogg, L., Lopez, M., Barry, P., & Davis, A. (2005). A placebo-controlled test of cognitive-behavioral therapy for comorbid insomnia in older adults. Journal of consulting and clinical psychology, 73(6), 1164.
Schierenbeck, T., Riemann, D., Berger, M., & Hornyak, M. (2008). Effect of illicit recreational drugs upon sleep: cocaine, ecstasy and marijuana. Sleep medicine reviews, 12(5), 381-389.
Shapiro, S. L., Bootzin, R. R., Figueredo, A. J., Lopez, A. M., & Schwartz, G. E. (2003). The efficacy of mindfulness-based stress reduction in the treatment of sleep disturbance in women with breast cancer. *Journal of psychosomatic research*, *54*(1), 85-91.
Smith, M. T., Huang, M. I., & Manber, R. (2005). Cognitive behavior therapy for chronic insomnia occurring within the context of medical and psychiatric disorders. *Clinical psychology review*, *25*(5), 559-592.
Smith, M. T., Perlis, M. L., Park, A., Smith, M. S., Pennington, J., Giles, D. E., & Buysse, D. J. (2002). Comparative Meta-Analysis of pharmacotherapy and behavior therapy for persistent insomnia. American Journal of Psychiatry, 159, 5-11.
Spielman, A. J., Saskin, P., & Thorpy, M. J. (1987). Treatment of chronic insomnia by restriction of time in bed. Sleep, 10, 45-55.
Swift, N., Stewart, R., Andiappan, M., Smith, A., Espie, C. A., & Brown, J. S. (2012). The effectiveness of community day-long CBT-I workshops for participants with insomnia symptoms: a randomised controlled trial. *Journal of sleep research*, *21*(3), 270-280.
Taillard, J., Philip, P., Coste, O., Sagaspe, P., & Bioulac, B. (2003). The circadian and homeostatic modulation of sleep pressure during wakefulness differs between morning and evening chronotypes. Journal of sleep research, 12(4), 275-282.
Taylor, H. R., Freeman, M. K., & Cates, M. E. (2008). Prazosin for treatment of nightmares related to

posttraumatic stress disorder. *American Journal of Health-System Pharmacy*, *65*(8), 716-722.

Troxel, W. M., Kupfer, D. J., Reynolds, C. F., Frank, E., Thase, M., Miewald, J., & Buysse, D. J. (2012). Insomnia and objectively measured sleep disturbances predict treatment outcome in depressed patients treated with psychotherapy or psychotherapy-pharmacotherapy combinations. The Journal of clinical psychiatry, 73(4), 478.

Ulmer, C. S., Edinger, J. D., & Calhoun, P. S. (2011). A multi-component cognitive-behavioral intervention for sleep disturbance in veterans with PTSD: a pilot study. Journal of Clinical Sleep Medicine, 7(01), 57-68.

Van Reen, E., Jenni, O. G., & Carskadon, M. A. (2006). Effects of alcohol on sleep and the sleep electroencephalogram in healthy young women. Alcoholism: Clinical and Experimental Research, 30(6), 974-981.

Viola, A. U., James, L. M., Schlangen, L. J., & Dijk, D. (2008). Blue-enriched light improves self-reported alertness and performance in the workplace. Journal of Sleep Research, 17, 117-117.

Vitiello, M. V., Rybarczyk, B., Von Korff, M., & Stepanski, E. J. (2009). Cognitive behavioral therapy for insomnia improves sleep and decreases pain in older adults with co-morbid insomnia and osteoarthritis. *J Clin Sleep Med*, *5*(4), 355-362.

Watanabe, N., Furukawa, T. A., Shimodera, S., Morokuma, I., Katsuki, F., Fujita, H., . . . Perlis, M. L. (2011). Brief behavioral therapy for refractory insomnia in residual depression: an assessor-blind, randomized controlled trial. The Journal of Clinical Psychiatry, 72(12), 1651-1658.

Winbush, N. Y., Gross, C. R., & Kreitzer, M. J. (2007). The effects of mindfulness-based stress reduction on sleep disturbance: a systematic review. *Explore: The Journal of Science and Healing*, *3*(6), 585-591.

Wood, B., Rea, M. S., Plitnick, B., & Figueiro, M. G. (2013). Light level and duration of exposure determine the impact of self-luminous tablets on melatonin suppression. *Applied ergonomics*, *44*(2), 237-240.

Woznica, A. A., Carney, C. E., Kuo, J. R., & Moss, T. G. (2015). The insomnia and suicide link: toward an enhanced understanding of this relationship. Sleep medicine reviews, 22, 37-46.

Wright, K. M., Britt, T. W., Bliese, P. D., Adler, A. B., Picchioni, D., & Moore, D. (2011). Insomnia as predictor versus outcome of PTSD and depression among Iraq combat veterans. Journal of clinical psychology, 67(12), 1240-1258.

Zachariae, R., Lyby, M. S., Ritterband, L. M., & Geiger-Brown, J. M. et al. Cognitive behavioral therapy in persons with comorbid insomnia: A meta-analysis. Sleep Med. Rev. 23, 54–67 (2015).

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